Operation/Reference Guide

NXD/T-1200V

12" Modero® Video Wall/Flush Mount Touch Panel

(Composite/S-Video Support)

Touch Panels

Last Revised: 7/2/2012

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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC RF Radiation Exposure Statement

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed an operated with a minimum distance of 20 centimeters between the radiator and your body.

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Introduction

AMX has taken a great leap forward with the release of their new 1200V-Series of Modero touch panels. These panels offer the ability to display Composite video, 802.11g communication, and USB support for extended input devices, and panel programming via a mini-USB port. The new G4 graphics and Video technology is supported by the release of the latest TPDesign4 Touch Panel Design Program. These video-capable panels support several video formats: NTSC, SECAM, and PAL (*Color Active (CA) panels don't support video*).

Each 1200V-Series panels have been pre-installed with 2 antennas which can be later used to configure each panel type for wireless communication (via an optional NXA-80211G wireless mini-PCI card).

Modero Video Touch Panels (1200V-Series)

The new and enhanced line of 12" Modero Touch Panel (NXT/NXD-1200V) represent the next step in video-capable panels and departs from the previously popular CA version. In addition to Composite/S-Video support (*does not support Component RGB signals*), the new 1200V panels feature dual USB connectivity for mouse and keyboard, and antennas, the use of a mini-USB port for panel programming and a complete departure from the use of an ICSNet connector for communication. These panels include a built-in microphone, left/right speakers, audio/headphone connector, and an included audio/video breakout box.

Table Top models use AMX's exclusive **SmoothTilt®** technology for effortless adjustment of the viewing angle.

Each panel is sold only as part of a 1200V Kit which includes both a panel and an NXA-AVB/ETHERNET Audio/Video Breakout Box (**FG2254-10**). This box facilitates the installation and distribution of video, data, and audio to Modero touch panels located up to 200 feet (60.96 m) from the breakout box. These panels are ideally suited for displaying full motion video and audio with overlay graphics for applications with demanding visual requirements. The following is a listing of the currently available 1200V panels:

1200-V Modero Video Touch Panels	
NXD-1200V (**FG2251-60K**)	12" Modero Video WallMount Touch Panel Kit (includes both an NXD panel and an NXA-AVB/ETHERNET A/V Breakout Box).
NXT-1200V (**FG2250-60K**)	12" Modero Video Table Top Touch Panel Kit (includes both an NXD panel and an NXA-AVB/ETHERNET A/V Breakout Box).

NXD-1200V (front view)

NXT-1200V (front view)

FIG. 1 Sample 1200V Video Touch Panels (front views)

Product Specifications (NXD-1200V and NXT-1200V)

The following table outlines the specifications for 1200V-Series of 12" Modero panels.

1200V Specifications	
Dimensions (HWD):	• NXD-1200V (with faceplate): 12.38" x 12.59" x 3.25" (31.43 cm x 31.97 cm x 8.25 cm) • NXT-1200V (Fully raised): 10.91" x 12.34" x 12.50" (27.70 cm x 31.33 cm x 31.75 cm) • NXT-1200V (Fully lowered): 6.77" x 12.34" x 12.50" (17.20 cm x 31.33 cm x 31.75 cm) • CB-TP12 (conduit/wallbox): 11.52" x 11.60" x 3.50" (29.27 cm x 29.47 cm x 8.89 cm) • MB-TP12 (VESA mounting box): 12.37" x 12.58" x 3.52" (31.42 cm x 31.95 cm x 8.94 cm)
Power:	• Constant current draw: 2.1 A @ 12 VDC (stand-alone) • Startup current draw: 3.2 A @ 12 VDC (stand-alone)
Minimum power supply required:	PSN4.4 Power Supply (FG423-45) - using accessories can increase the power draw requirements.
Memory:	256 MB on-board memory
Compactflash:	2GB or greater (upgradeable to 4GB - see *Other AMX Equipment*). ***Note**: AMX may increase Compactflash size at any time in response to market availability.*
Weight:	10.80 lbs (4.90 kg)
LCD Parameters:	• Aspect Ratio: 4:3 • Brightness (luminance): 250 cd/m2 • Channel transparency: 8-bit Alpha channel transparency • Contrast ratio: 300:1 • Display area (HW): 183.10 mm x 247.40 mm • Display colors: 256K (18-bit color depth) • Dot/Pixel pitch: 0.297 mm • Screen resolution (HV): 800 x 600 pixels • Video formats: NTSC, PAL, and SECAM (shown within variable-size video windows)
Active Screen Area:	9.68” x 7.26” (24.60cm x 18.45cm)
Viewing Angles:	Vertical: + 80° (up from center) and - 80° (down from center)
Supported Audio Sample Rates:	48000Hz, 44100Hz, 32000Hz, 24000Hz, 22050Hz, 16000Hz, 12000Hz, 11025Hz, and 8000Hz.
Certifications:	FCC Part 15 Class B, CE, and EN 60950
Front Panel Components:	• Light Sensor: Photosensitive light detector for automatic adjustment of the panel brightness • Motion Sensor (PIR): Proximity Infrared Detector to wake the panel when panel is approached • Front Setup Access Button: Pushbutton (grey) used to either put the panel into a "sleep" or "wake" state • Microphone: Used for intercom applications • Speakers: Stereo output with a frequency response of 450 Hz - 7 KHz
Rear Panel Components:	• Audio/Video Connector: RJ-45 connector for communication of differential audio/video signals • Ethernet 10/100 Port: RJ-45 port for 10/100 Mbps communication • PWR Connector: 2-pin 3.5 mm mini-Phoenix connector • Stereo Output Connector: Stereo output through a 3.5mm mini-jack • USB Connector: Two Type A USB ports • Mini-USB Connector: 5-pin Mini-USB connector

1200V Specifications (Cont.)	
Operating /Storage Environments:	• Operating Temperature: 10° C (50° F) to 40° C (104° F) • Operating Humidity: 20% to 85% RH • Storage Temperature: -20° C (-4° F) to 60° C (140° F) • Storage Humidity: 5% to 85% RH
Included Accessories:	• Installation Kit for 12" and 17" NXD panels (KA2251-01): - 2-pin mini-Phoenix connector (41-5025) - Three Phillips-head screws (#4-20 x 0.250 Black) (80-0114-08) - One CAT5 Suppression Ferrites (04-0014) - Four Drywall clips (62-5924-05) and #6 -metal strips (80-0192) • Installation Kit for 12" NXT panels (KA2251-03): - 2-pin mini-Phoenix connector (41-5025) - Three Phillips-head screws (#4-20 x 0.250 Black) (80-0114-08) - Two CAT5 Suppression Ferrites (04-0014) • Modero Table Top Cable (CA2250-50) - provided with all NXT Table Top panels. • NXA-AVB/ETHERNET Breakout Box (FG2254-10)
Other AMX Equipment:	• CB-TP12 Conduit/Wallbox (FG031-10) • CC-USB (Type A) to Mini-B 5-Wire programming cable (FG10-5965) • Kensington Lock Bracket (FG2259-10) (*optional only with NXTs*) • MB-TP12 Universal VESA Mounting Box for NXD panels (FG031-50): - Black metallic VESA back box (62-0031-50) - Black plastic cover (with grommet opening) (60-0031-50) - Strain relief grommet (45-0004-03) - Four Phillips pan-head screws (#8-32 x 0.50 Black) (80-0146-02) - Twelve Under-cut Phillips-head screws (#6-32 x 0.500 Black) (80-0139) • NXA-BASE/B (FG2255) • NXA-PCI80211G Wireless Card (FG2255-04) • NXA-RK12 Rackmount kit for 12" Wall Mount panels (FG2904-50) • NXT-BP (FG2250-10) • NXT-CHG (FG2250-50) • PSN4.4 Power Supply (12 VDC) (FG423-45) • PSN6.5 Power Supply (12 VDC) (FG423-41) • Upgrade Compactflash (pre-programmed with firmware): NXA-CFTP4G, 4GB Compactflash Upgrade (FG2116-08)

1200V-Series Modero Connectors

FIG. 2 shows the connectors on the 1200V Modero Video panels. The Audio/Video RJ-45 connector provides differential audio/video signals between the touch panel and the NXA-AVB/ETHERNET.
This connector routes Composite video, Stereo (left/right) audio, and microphone audio.

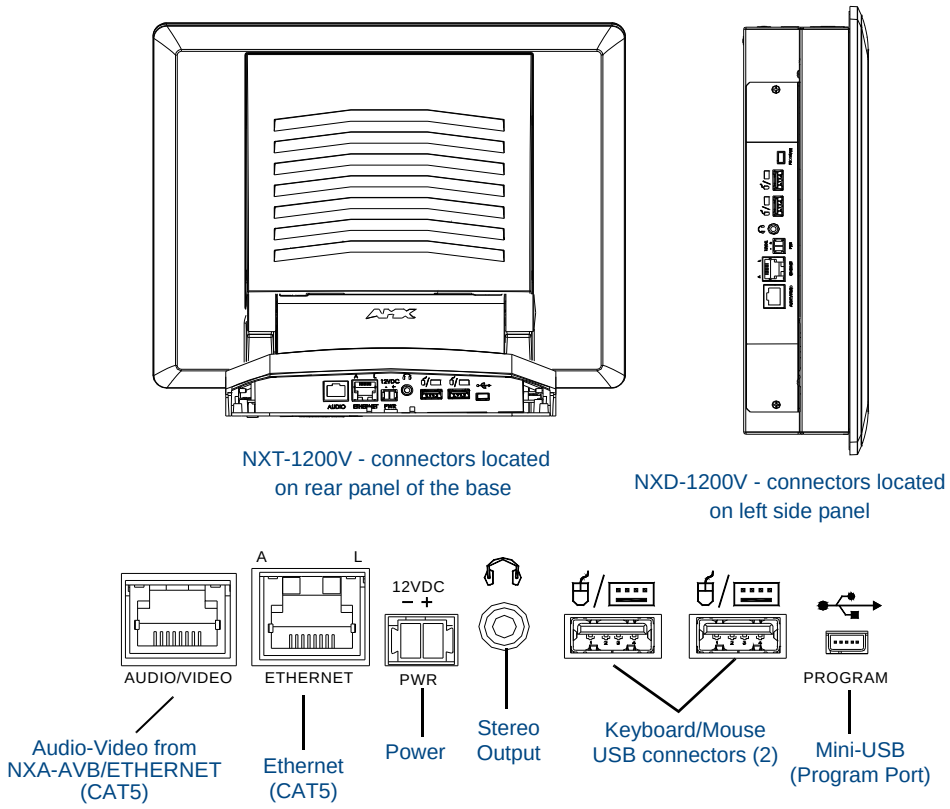


FIG. 2 Connector layout on sample 1200V Video Touch Panels

Cleaning the Touch Overlay

You should clean the touch screen overlay after each day's use. Always use clean cotton cloths and a spray bottle containing water.

Connecting and Using Input Devices

The 1200V panel can have up to two USB-capable input devices connected for use on its different firmware and TPD4 panel pages. These input devices can consist of a keyboard or mouse.

NOTE

USB-connected input devices are not detected and recognized by the panel until power is cycled to the unit.
A mini-USB connection is only detected after it is installed onto an active panel. Connection to a previously powered panel, allows the PC to detect the panel and assign an appropriate USB driver.

1. Insert the input device USB connectors into the appropriate USB connector on the panel.
2. Press the on-screen **Reboot** button from the Protected Setup page to save any changes and restart the panel.
3. After the panel splash-screen disappears:
   - If a USB mouse has been connected, a mouse cursor appears on the panel screen and its location corresponds to the mouse cursor position sent by the external USB mouse.
   - If a USB keyboard has been connected, only on-screen keyboards and keypads will reflect any external keystrokes sent from the external USB keyboard.

Touch Panel Accessories

Overview

The following section outlines and describes both the included accessories and other AMX equipment available for these touch panels.

NXA-AVB/ETHERNET Breakout Box (FG2254-10)

The NXA-AVB/ETHERNET Breakout Box (FIG. 3) is included as part of the 1200V Kit configuration (*panel and box*) but can be purchased as a separate accessory. This box facilitates the installation and distribution of video, data, and audio to Modero touch panels located up to 200 feet (60.96 m) from the AVB box. This unit accepts either Composite or S-Video from standard video devices.

This breakout box can be mounted on either a horizontal flat surface or in an equipment rack (by using an optional AC-RK Rack Kit).

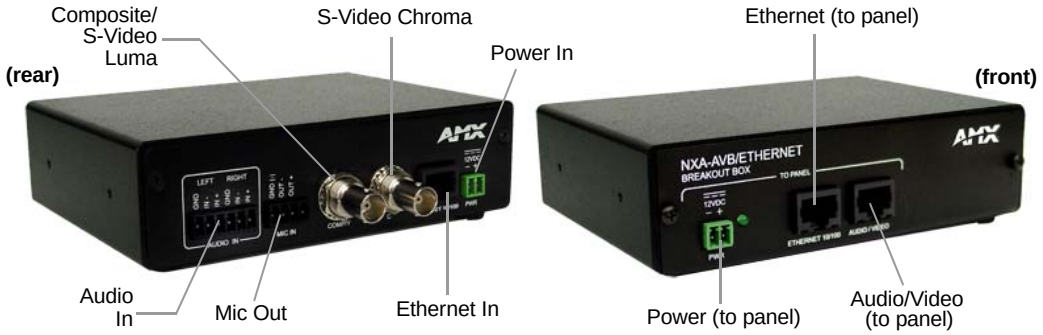


FIG. 3 NXA-AVB/ETHERNET Breakout Box (front and rear views)

Product Specifications

NXA-AVB/ETHERNET Specifications	
Dimensions (HWD):	• 1.50" x 5.55" x 4.88" (3.81 cm x 14.10 cm x 12.40 cm) • Width when attached to mounting ears: 6.65" (16.89 cm)
Power Consumption:	• 50mA (with audio/video input) • 23mA (with no audio/video) • Routed through NXA-AVB/Ethernet using a 12 VDC-compliant power supply
Certifications:	• FCC Part 15 Class B, CE, and EN 60950
Features:	• Accepts either Composite or S-Video (***video-capable panels only***) • Provides audio distribution to the non-video touch panels over a CAT5 cable (up to 200 ft.) • Provides video/audio distribution to the video-capable touch panels over CAT5 cable up to 200 ft. (60.9 m)
Availability:	• This unit is included with CV5, CV7, CV10, and 1200V-Series Kit configurations
Front Components:	• 2-pin 3.5 mm Phoenix connector for power to the touch panel • Green LED provides an indication of power status • RJ-45 connector provides Ethernet signals to the touch panel • RJ-45 connector provides differential audio and video signals to the touch panel (panel type dependant)

NXA-AVB/ETHERNET Specifications (Cont.)	
Rear Components:	• 6-pin 3.5 mm Phoenix connector for in-bound (left/right channel) audio • 4-pin 3.5 mm Phoenix connector for out-bound (from microphone) audio • BNC connector (female) for Composite or Chroma (**for video-capable panels only**) • BNC connector (female) for luminance (**for video-capable panels only**) • RJ-45 connector for Ethernet input from the control system • 2-pin 3.5 mm Phoenix connector for in-bound power
Included Accessories:	• Two 2-pin Phoenix connectors (41-5025) • 4-pin Phoenix connector (41-5047) • 6-pin Phoenix connector (41-5063) • Rack Mount Kit (KA2250-40) with mounting bracket (62-2254-02)
Other AMX Equipment:	• AC-RK Accessory RackMount Kit (**FG515**) • Modero Table Top Cable (CA2250-50)

Installing the NXA-AVB/ETHERNET

A 12 VDC-compliant power supply can indirectly provide power to a Modero panel by routing power through the NXA-AVB/ETHERNET Breakout Box. FIG. 4 shows a sample wiring configuration using both an indirect or direct power connection for a video-capable Modero panel.

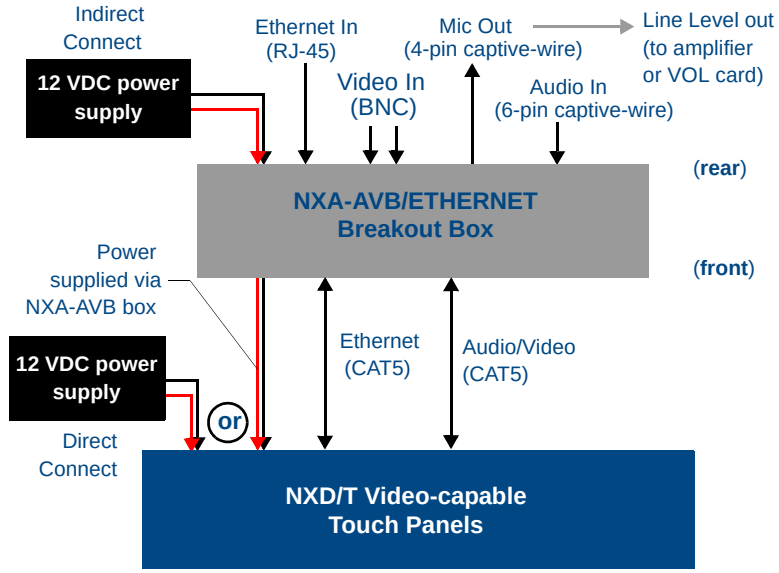


FIG. 4 Sample wiring configuration on video-capable panels using this breakout box

A 12 VDC-compliant power supply can also directly provide power through the unit to a target Modero panel. FIG. 5 shows a sample wiring configuration for a non-video capable Modero panel.

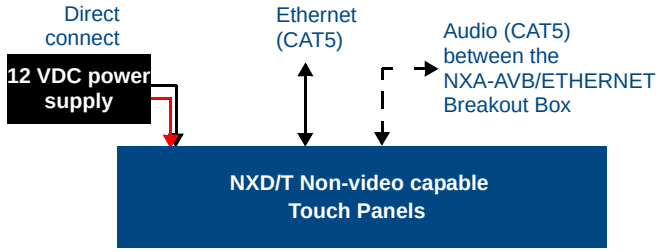

Direct connect
12 VDC power supply
Ethernet (CAT5)
Audio (CAT5) between the NXA-AVB/ETHERNET Breakout Box
NXD/T Non-video capable Touch Panels

FIG. 5 Sample wiring configuration using CA Modero panels

NOTE

The breakout box unit can be mounted on either a horizontal flat surface or into an equipment rack (by removing the front screws and attaching it to an optional AC-RK). The power supply being used on the NXA-AVB/ETHERNET is dependant on the power requirements of the target touch panel.

Use a standard CAT5 Ethernet cable to provide both communication and 10/100 network connectivity between the panel, NXA-AVB/ETHERNET, NetLinx Master, and the network.

Wiring the NXA-AVB/ETHERNET connectors and cables

The inputs and outputs on the breakout box are separated into front and rear connectors. The rear connectors are used to input external signals. The front connectors are used to communicate signals between the NXA-AVB/ETHERNET and a target Modero panel. FIG. 6 provides a layout of the wiring connection both into and from the breakout box.

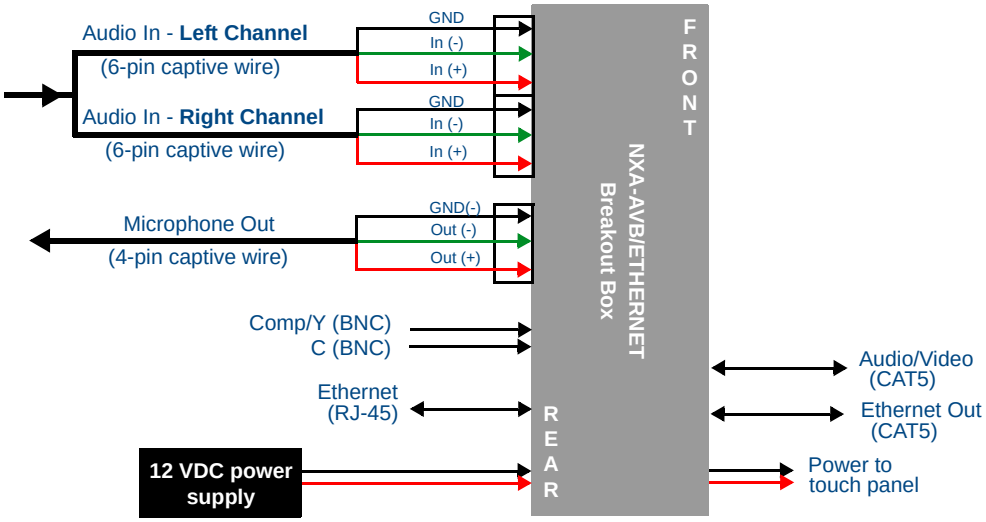


FIG. 6 NXA-AVB/ETHERNET Breakout Box connector wiring diagram

The rear-panel wiring connections are described below (from left to right):

- AUDIO IN: 6-pin mini-Phoenix connector, divided into left and right audio channels. Each channel is divided into GND, IN+, and IN- terminal cable connectors (2 sets of 3 for each channel).

  An example of this cable is to strip the ends of 2 RCA audio cables and insert them into their respective locations on the Audio In port.

  Either a balanced (+, -, and GND) or unbalanced (+ and GND) audio signal can be connected to this input.

- MIC OUT: 4-pin mini-Phoenix connector, divided into GND, OUT-, and OUT+ terminal connectors.

  An example of this cable is to strip the terminal ends of a 3.5mm mini-jack and insert them into their respective locations on the Mic Out port. This signal can be fed as a Line Level In to either an amplifier or an AMX VOL card.

  Either a balanced (+, -, and GND) or unbalanced (+ and GND) audio signal can be connected to this output.

- Video In BNCs: Feeds either Composite/S-Video Luma or S-Video Chroma signals into the NXA-AVB/ETHERNET. This feed is then redirected out to a Modero panel through the front Audio/Video CAT5 port.

- ETHERNET: RJ-45 connector routes data to the G4 touch panel through the front Ethernet port. These connections use a standard CAT5 Ethernet cable to provide communication between the target touch panel, breakout box, and NetLinx Master.

- PWR: 2-pin mini-Phoenix connector that connects to a 12 VDC-compliant power supply. This port can be used to provide power to a Modero panel by sending it through the NXA-AVB/ETHERNET (rear power connector through to the front power connector).

Wiring the NXA-AVB/ETHERNET for Unbalanced Audio

Most domestic audio equipment has unbalanced audio inputs and outputs. This means that the audio output (left, right, or mono) appears on a single wire, and is referenced to "0 V" or "Ground". Typical connectors used are RCA "phono" connectors, DIN plugs/sockets, and 0.25" (6.3mm) or 3.5mm jack plugs/sockets.

Unbalanced audio is adequate for most domestic environments and for line-level signals in a typical broadcast studio. Problems may occur if the signals are carried over long distances, especially if the source and destination have separate main supplies. Use the following wiring drawing (FIG. 7) to configure an unbalanced audio connection.

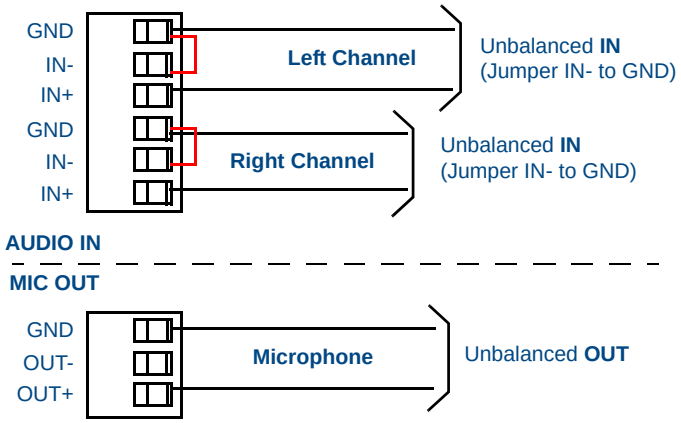


FIG. 7 Wiring the rear AUDIO IN and MIC OUT for use with Unbalanced Audio

When using unbalanced audio for the AUDIO IN connector (FIG. 7), the "-" and the "GND" terminals should be connected together and then connected to the GND of the unbalance audio signal. When connecting to an unbalanced audio input from the MIC OUT connector (FIG. 7), wire the "+" terminal to the signal input, and the "GND" terminal to the signal ground.

Wiring the NXA-AVB/ETHERNET for Balanced Audio

Professional audio equipment will often use balanced audio inputs and outputs, usually on 3-pin "XLR" connectors. A balanced audio signal consists of a pair of wires carrying the audio signal in anti-phase with each other (if one wire carries a positive voltage, the other carries an equal and opposite negative voltage).

The advantage of balanced audio over unbalanced audio is its ability to reject external interference added as the signal is carried over the wire. The receiving equipment takes the voltage difference between the two wires as the input signal. Interference will usually get added to both wires equally, and so gets cancelled by the receiving equipment.

The 3 wires used in a typical XLR lead are often referred to as Ground, Live (Hot) and Return (Cold). "Live" and "Return" carry the "in-phase" and "out-of-phase" versions of the audio respectively. The pins of the XLR plug/socket are as follows:

- X = Ground
- L = Live (Hot)
- R = Return (Cold)

When connecting the MIC OUT connector to a balanced audio input (FIG. 8), use all three audio terminals (+, -, and GND), then connect the "+" terminal to the "live" signal, the "-" terminal to the "return" signal, and the "GND" terminal to the ground signal.

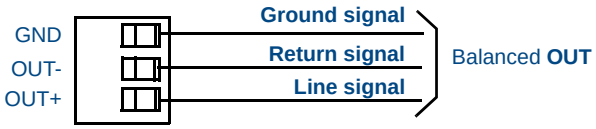


FIG. 8 Wiring the rear MIC OUT connector for use with Balanced Audio

Modero Table Top Cable (CA2250-50)

The Modero Table Top Touch Panels come with a standard 10' (3.048 m) Modero cable (CA2250-50) that supports Ethernet, Audio/Video, and Power connections. The cable comes terminated with two RJ45 connectors (Ethernet and Audio/Video) and a single 2-pin mini-Phoenix connector for power.

FIG. 9 10 Foot Modero Table Top Cable

Product Specifications

Modero Table Top Cable Specifications	
Dimensions (HWD):	• Length: 10 feet (3.048 m)
Connectors:	• Ethernet RJ-45 connector (White) routes Ethernet signals between the touch panel and the NXA-AVB/ETHERNET Breakout Box. • Audio/Video RJ-45 connector (Black) routes differential audio/video signals between the touch panel and the box. • 2-pin 3.5 mm mini-Phoenix power connector to route power from the external breakout box to the target panel.
Included Accessories:	• Modero Table Top Cable (CA2250-50)
Other AMX Equipment:	***Note**: All 1200V, VG-Series, and CV10 Table Top panels routing an Audio/Video signal from a breakout box must use the appropriate number of CAT5 Suppression Ferrites which are included as part of installation kits accompanying your particular Modero panel.* Each of the following Installation Kits come with the appropriate number of CAT5 Suppression Ferrites. **These ferrites must be installed onto their appropriate locations.** • Installation Kit for 12" and 17" NXD panels (KA2251-01): - 2-pin mini-Phoenix connector (41-5025) - Three Phillips-head screws (#4-20 x 0.250 Black) (80-0114-08) - **One** CAT5 Suppression Ferrite (04-0014) - Four Drywall clips (62-5924-05) and #6 -metal strips (80-0192) • Installation Kit for 15" NXD panels (KA2251-02): - 2-pin mini-Phoenix connector (41-5025) - Three Phillips-head screws (#4-20 x 0.250 Black) (80-0114-08) - **Two** CAT5 Suppression Ferrites (04-0014) - Four Drywall clips (62-5924-05) and #6 -metal strips (80-0192) • Installation Kit for 12" NXT panels (KA2251-03): - 2-pin mini-Phoenix connector (41-5025) - Three Phillips-head screws (#4-20 x 0.250 Black) (80-0114-08) - **Two** CAT5 Suppression Ferrites (04-0014)

Modero Table Top Cable Specifications (Cont.)	
Other AMX Equipment (Cont.):	• Installation Kit for 15" and 17" NXT panels (KA2251-04): - 2-pin mini-Phoenix connector (41-5025) - Three Phillips-head screws (#4-20 x 0.250 Black) (80-0114-08) - **One** CAT5 Suppression Ferrite (04-0014) • Installation Kit for 10" NXT panels (KA2259-01): - 2-pin 3.5 mm mini-Phoenix connector (41-5025) - **One** CAT5 Table Top Suppression Ferrite (04-0014) - **One** cylindrical CAT5 USB Mouse Suppression Ferrite (04-0018-SA)

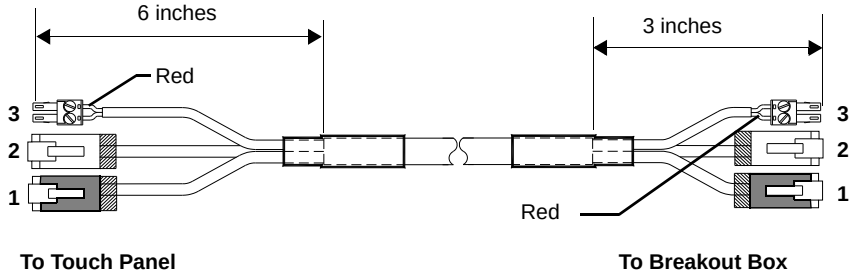
Wiring information for the Modero Table Top cable

If your installation requires custom cable configurations, you can purchase bulk (non-terminated) cable from **Liberty Wire and Cable** under the nomenclature *"AMX Table Top Cable - Modero"* (phone#: (800) 530 8998 or +1-719-388-7518). When building a custom Table Top cable, please refer to the table below to calculate the maximum length of the cable for your particular installation/setup.

Maximum Table Top Cable Lengths for Modero Panels					
Panel Sizes:	7" Panel	10" Panel	12" Panel	15" Panel	17" Panel
Setup I: Using a panel *without* a battery base*:					
Maximum cable length	150' (45.72 m)	150' (45.72 m)	49' (14.94 m)	39' (11.89 m)	10' (3.05 m)
Setup II: Using a panel *with* a battery base*:					
Maximum cable length	56' (17.07 m)	56' (17.07 m)	25' (7.62 m)	15' (4.57 m)	10' (3.05 m)
* The total Modero cable run from the 13.5 V power source.					

* The total Modero cable run from the 13.5 V power source (12 VDC-compliant power supply).

FIG. 10 shows the top and cross-section views of the Table Top cable.



Connector **1** - used for Audio/Video (Black)
Connector **2** - used for Ethernet (White)
Connector **3** - used for Power

FIG. 10 Modero Table Top cable (top and cross-section views)

The following table provides the wiring information (color coding) for each of the three available cable connectors on each side of the Modero Table Top Cable.

Modero Table Top Cable Wiring Table			
Wire	Connector 1	Connector 2	Connector 3
1	White/Orange	White/Orange	Red
2	Orange/White	Orange/White	Black
3	White/Green	White/Green	-
4	Blue/White	Blue/White	-
5	White/Blue	White/Blue	-
6	Green/White	Green/White	-
7	White/Brown	White/Brown	-
8	Brown/White	Brown/White	-

The following figures provide a cross-section view (FIG. 11) and a description (FIG. 12) of the Modero Table Top Cable:

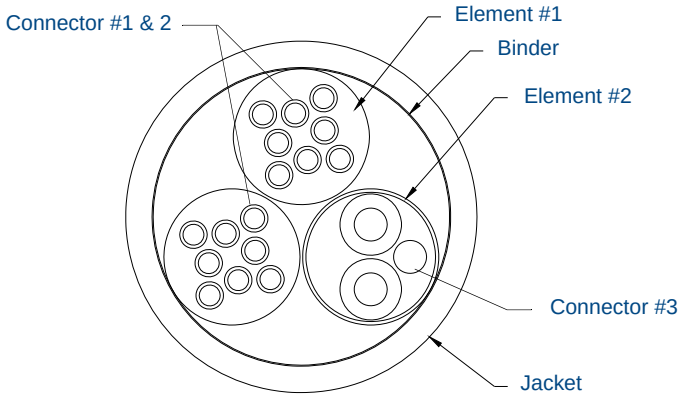


FIG. 11 Table Top Cable - cross-section view

DESCRIPTION:	9/PAIRS COMPOSITE CABLE CONSISTING OF: ELEMENT #1: TWO 4/PAIR 24 AWG STRANDED TINNED COPPER, POLYETHYLENE INSULATION, ELEMENT #2: 1/PAIR 18 AWG STRANDED TNNED COPPER, PVC INSULATION AND FOIL SHIELDED OVERALL PAPER BINDER AND FLEX-PVC JACKET.
ELEMENT #1:	2 X 4/PAIRS: 24 AWG STRANDED COPPER
CONDUCTOR:	24 AWG 7/32 TINNED COPPER; OD .024" NOMINAL
INSULATION:	.0075" WALL POLYETHYLENE; OD .039" NOMINAL
COLOR CODE:	P1: WHITE/BLUE, BLUE P2: WHITE/ORANGE, ORANGE P3: WHITE/GREEN, GREEN P4: WHITE/BROWN, BROWN
PAIR:	2 CONDUCTORS TWINNED LEFT HAND LAY (TWISTED AT VARIED LAYS TO MINIMIZE CROSS TALK)
CABLE:	4/P CABLED LEFT HAND LAY (BLUE BINDER, ORANGE BINDER)
BINDER:	PAPER TAPE
ELEMENT #2:	1 PAIR: 18 AWG SHIELDED
CONDUCTOR:	18 AWG 16/30 TINNED COPPER; OD .046" NOMINAL
INSULATION:	.010" WALL PVC; OD .066" NOMINAL
COLOR CODE:	BLACK, RED
DRAIN WIRE:	#22 7/30 TINNED COPPER
SHIELD:	ALUM/POLYESTER TAPE (FOIL SIDE IN)
FINAL ASSEMBLY:	TWO ELEMENT #1 & ELEMENT #2 CABLED ON COMMON AXIS TO MINIMIZE DIAMETER
BINDER:	CLOTH TAPE 25% OVERLAP
JACKET:	.045" WALL FLEXIBLE PVC,
COLOR:	BLACK MATT
DIAMETER:	.375 INCHES NOMINAL
MARKING:	NONE

FIG. 12 Table Top Cable - Specification Elements

NOTE

Each bundle of 4 twisted pairs includes a colored tape indicator for identification.

Installing CAT5 Suppression Ferrites

Before connecting the RJ-45 cables to the panel, install the necessary number of CAT5 Suppression Ferrites (FIG. 13) to their appropriate locations. These ferrites come as part of the Installation Kits mentioned in the Specification table. **No tools are required for this installation.**

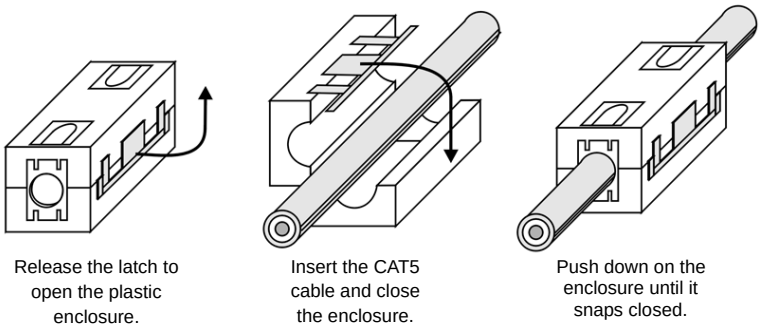

Release the latch to open the plastic enclosure.
Insert the CAT5 cable and close the enclosure.
Push down on the enclosure until it snaps closed.

FIG. 13 Installing the CAT5 Suppression Ferrites

NOTE

All 1200V-Series, VG-Series, and Table Top CV10 panels require the installation of an appropriate number of CAT5 Suppression Ferrites when they use an RJ-45 cable to feed an A/V signal from the breakout box.

1. The CAT5 Suppression Ferrite is housed within a plastic enclosure (shown in FIG. 12) with a latch release on one side. Pull to release the latch and open the enclosure.
2. Grasp the Black RJ-45 Audio/Video cable being connected to the panel. This end of the cable is longer than the opposing end which connects to the breakout box (6 inches vs 3 inches). Refer to FIG. 14 for more detailed information.
3. Insert the panel-end of the Black RJ-45 Audio/Video cable into the groove along the inside of the enclosure.

NOTE

The CAT5 Suppression Ferrites MUST be installed onto the cable connected to the Modero's Audio/Video RJ-45 connector (just behind the connector).

4. Snap the enclosure shut with the cable inside, and you're done.
5. Repeat this process again **only** when installing an additional CAT5 Suppression Ferrite (*model specific*).

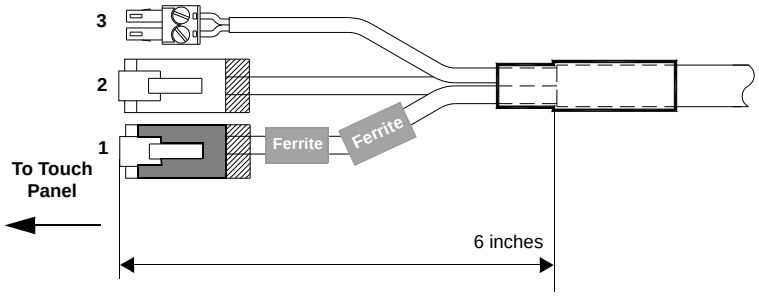


FIG. 14 Ferrite connector location on Audio/Video RJ-45 cable

NXA-CFTP Compact Flash (FG2116-2x)

Every Modero panel is shipped with two factory default modules: an EXM Memory Module and a Compact Flash card. **These panels are shipped with a 256 memory module which is not upgradeable.**

The default 128 MB Compact Flash card is factory programmed with specific panel firmware and is the only upgradeable memory component. This component can be ordered from AMX in several different upgrade sizes (as listed in the following table):

Optional Compact Flash Memory Upgrades	
Compact Flash:	
NXA-CFTP256M - 256 MB Compact Flash card	(**FG2116-23**)
NXA-CFTP512M - 512 MB Compact Flash card	(**FG2116-24**)
NXA-CFTP1G - 1 GB Compact Flash card	(**FG2116-25**)

Upgrading the internal components involves opening the panel enclosure/outer housing to access the internal circuit board, removing the existing part, and replacing them with the upgrade components, as described in the following sections.

NOTE

It is recommended that any upgrade of internal equipment be done simultaneously in order to reduce the risk of damage to internal components.

NXA-PCI80211G Wireless Card (FG2255-04)

The 1200V-Series and VG-Series Modero touch panels can connect to an internal NXA-PCI80211G compatible mini-PCI Wireless Card connected to two antennas (57-2250-10). All 1200-V and VG-Series panels come factory installed only with the two antennas used for later connection to the optional wireless card which is field-installable.

FIG. 15 NXA-PCI80211G mini-PCI Wireless Card

The NXA-PCI80211G card functions using a 2.4GHz bandwidth with a maximum data transfer rate of 54Mbps. This card is compatible with IEEE 802.11 standards such as: 802.11b and 802.11g.

The NXA-80211G allows the end-user to take advantage of larger bandwidth to utilize features such as: wireless intercom, Motion JPEG, networked video, and standard wireless Ethernet communication to both a NetLinx controller and networked computers. Please follow your particular Wireless Access Point's instruction manual for the correct procedures to setup either a secured or unsecured connection.

FCC Statement:
This device complies with Part 15 of the FCC rules. Subject to the following two conditions: **1. This device must not cause harmful interference and** **2. This device must accept all interference, including interference that interferes with the operation of this device.** **Modifications not expressly approved by the manufacturer will void the user's authority to operate the equipment.** **WARNING: This device has been evaluated and found to be compliant with the FCC Rules for RF Exposure when the device is operated at a minimum separation distance from the user and nearby persons. Operation of this device at closer distances should be avoided.**
Certifications: FCCID: CWU-WN2301A, CE, EN 60950, EN 300 328, and RSS 210

FIG. 16

Product Specifications

NXA-PCI80211G Specifications	
Dimensions (HWD):	• 0.02" x 2.13" x 4.66" (5.0 mm x 54.0 mm x 118.4 mm)
Weight:	• 1.05 oz (30g)
Description:	• Direct Sequence Spread Spectrum (DSSS)/CCK 802.11g Wireless mini-PCI card with detachable antennas.
Features:	• Contains integrated power amplifier (PA) and low-noise amplifier (LNA) • Diversity Antenna Connectors automatically select the best available signal • Enhanced transmit and receive chains • Field-installable • Increased sensitivity and multipath tolerance • Operates from 2.300-2.500 GHz • Operate at ISM frequency bands (2.4GHz) with 54Mbps data rate • Pre-configured to communicate with current AMX Wireless Access Points • Support for IEEE 802.11b and 802.11g • Wired Equivalent Privacy (WEP) 64-bit and 128-bit data encryption
Antenna Type:	• Dual antenna connector
Availability:	• All 1200V-Series and VG-Series NXT Table Top panels come factory configured for wireless communication. *These NXT panels are all factory installed with both the NXA-80211G wireless mini-PCI and 2 antennas.* • Optional to the following NXD panels: - NXD-1200V - NXD-1200VG - NXD-1500VG - NXD-1700VG
Bus Interface:	• mini-PCI card, TypeIIIB
Certifications:	• FCCID: CWU-WN2301A, CE, EN 60950, EN 300 328, and RSS 210and FCCID (CWU-WN2301A)
Frequency Range:	• Using 802.11b & g communication: - 2.412 ~ 2.462 GHz - North America - 2.412 ~ 2.484 GHz - Japan - 2.412 ~ 2.472 GHz - Europe ETSI - 2.457 ~ 2.462 GHz - Spain - 2.457 ~ 2.472 GHz - France
Media Access Technique:	• CSMA/CA with ACK
Modulation:	• Orthogonal Frequency Division Multiplexing (OFDM) / Complementary Code Keying (CCK)
Network Architecture:	• Ad-hoc mode (Peer-to-Peer) • Infrastructure mode
Network Standard:	• IEEE Compliant • 802.11b and 802.11g
Operating Channels:	• Using 802.11b & g communication: - 11: (Ch 1 - 11) - North America - 14: (Ch 1 - 14) - Japan - 13: (Ch 1 - 13) - Europe ETSI - 2: (Ch 10 - 11) - Spain - 4: (Ch 10 - 13) - France
Operating Environment:	• Temperature: 0°C ~ 55°C (32°F to 131°F) (operating) and -20°C ~ 70°C (-4°F to 158°F) (storage) • Humidity: (non-condensing) 5% ~ 90% RH (operating) and (non-condensing) 5% ~ 95% RH (storage)
Operating Voltage:	• 3.3V ± 5% I/O supply voltage

NXA-PCI80211G Specifications (Cont.)	
Power Consumption:	• @ 802.11b communication: - RX: 300 mA - TX: 64 mA - Sleep: 12mA • @ 802.11g communication: - RX: 330 mA - TX: 575 mA - Sleep: 12mA
Radio Data Rate:	• 802.11g compliant: 1, 2, 5.5, 11 (DSSS/CCK); 6, 9, 12, 18, 24, 36, 48, and 54 (OFDM) Mbps data rates
Receiver Sensitivity:	• Using 802.11b communication: 1 Mbps: -86 dBm (max) 2 Mbps: -84 dBm (max) 5.5 Mbps: -83 dBm (max) 11 Mbps: -80 dBm (max) • Using 802.11g communication: 1 Mbps: -86 dBm (max) 2 Mbps: -84 dBm (max) 5.5 Mbps: -83 dBm (max) 11 Mbps: -80 dBm (max)
Security:	• 64-bit and 128-bit WEP
Availability:	• All 1200V-Series and VG-Series NXT Table Top panels can be field upgraded for wireless communication using the optional NXA-PCI80211G mini-PCI card. • Optional to the following NXD panels: - NXD-1200V - NXD-1200VG - NXD-1500VG - NXD-1700VG

Installation and Upgrade of the Internal NXT Components

Upgrading the components within the Table Top panel involves removing the outer housing (with speaker plate), removing and/or installing an existing component, and then placing the outer housing back onto the NXT panel, as described in the following sections.

NOTE

***Do not** use Ethernet cables containing mounting boots. These boots could make removal of the Ethernet connectors (from the panel) difficult and cumbersome.*

Step 1: Remove the existing NXT Outer Housing

1. Carefully detach all connectors from the rear of the touch panel and then gently place the touch panel LCD facedown onto a soft cloth to expose the under-side of the base (FIG. 17). This step helps prevent scratching of the LCD.
2. Tilt the base forward so that both the bottom surface and Housing Screws are easily accessible and then carefully remove the four plastic adhesive feet.

NOTE

Reference the location of the four plastic adhesive "feet". Once the outer housing is placed back onto the panel, these "feet" must be placed back in their original locations so they can fit into their provided openings on a Battery Base.

3. While holding the outer housing and base plate at a 45° (*to prevent it from sliding*), use a grounded Phillips-head screwdriver to remove the eight Housing Screws.

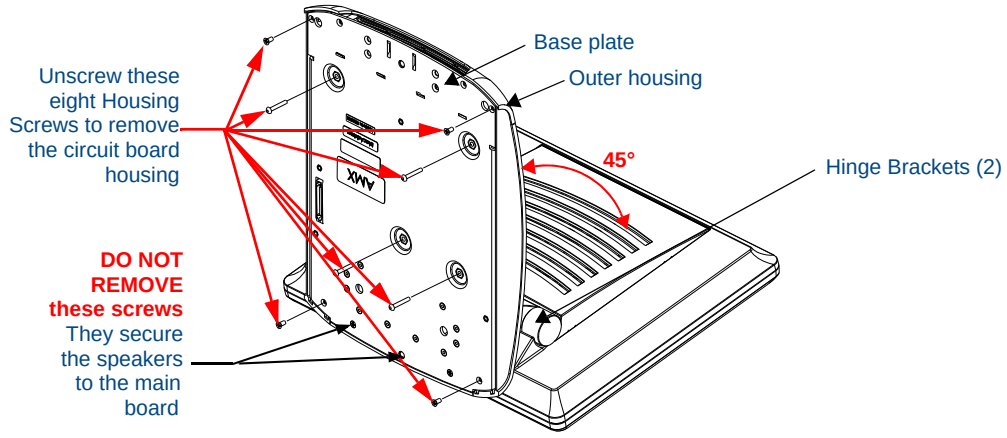

Base plate
Outer housing
Unscrew these eight Housing Screws to remove the circuit board housing
45°
Hinge Brackets (2)
DO NOT REMOVE these screws
They secure the speakers to the main board

FIG. 17 Location of the attachment screws underneath an NXT panel base

4. Rotate the panel back over (while gripping the entire unit with outer housing) and rest the base on a flat surface.
5. Gently tilt the LCD backward to a 45° angle.
6. *In a single motion*, carefully pull the outer housing up and then out (away from the LCD panel) to expose the internal circuit board.
7. Unscrew the Stereo Output nut from the Stereo Output jack.
8. Firmly grab the existing connector plate and slide it up and away from the base.

Step 2: Install the 802.11g mini-PCI Wireless Card

1. Discharge any static electricity from your body by touching a grounded metal object.
2. Locate the mini-PCI card connector on the main board (FIG. 18 and FIG. 19).

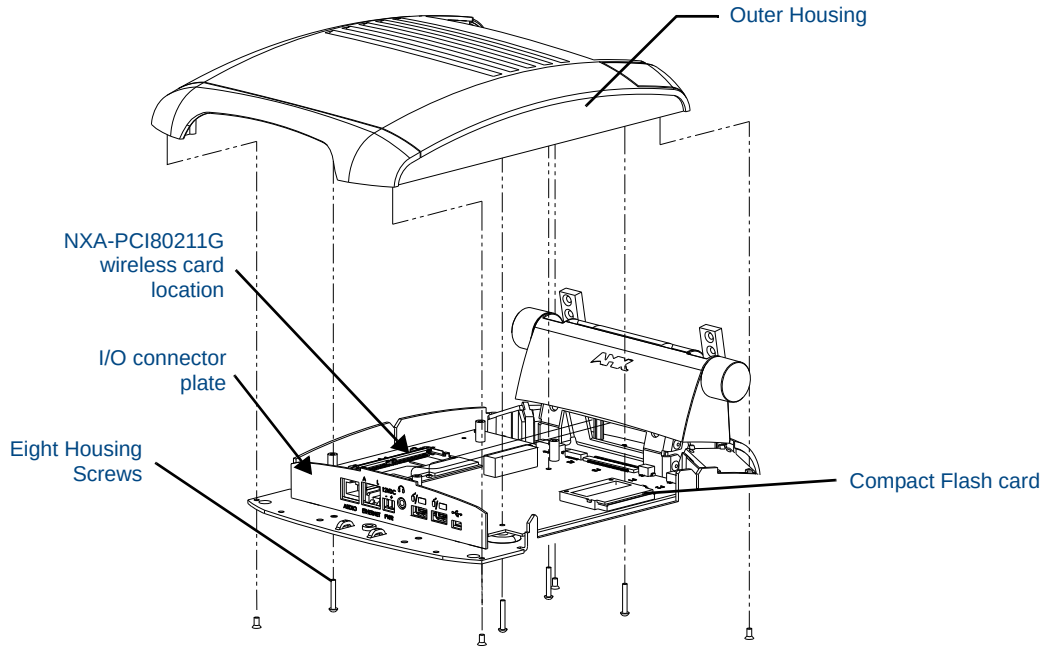


FIG. 18 Location of the NXA-PCI80211G wireless card on the NXT board

3. Carefully remove the gold-tipped terminal ends of the antenna from their factory default connectors on the main board. *The antenna is secured at this location to restrict its movement prior to connection to a wireless card.*
4. Firmly grasp the NXA-PCI80211G mini-PCI card (from the edges) and insert the pins (at a 25° angle) into the opening on the connector (FIG. 20).

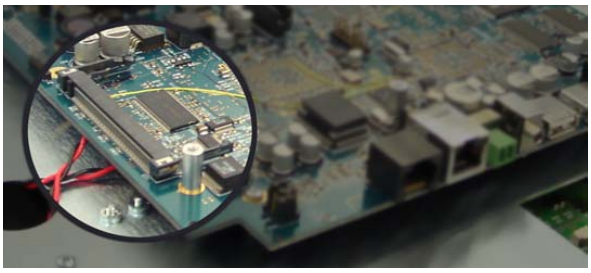


FIG. 19 Location of the mini-PCI card connector on main board

5. While maintaining the 25° angle alignment on the new module, push it in firmly until the contact pins are completely inside the connector and the card "snaps" into place (FIG. 20).
6. Push the card downward (to the main board) until the side braces snap atop the NXA-PCI80211G and hold it in place.

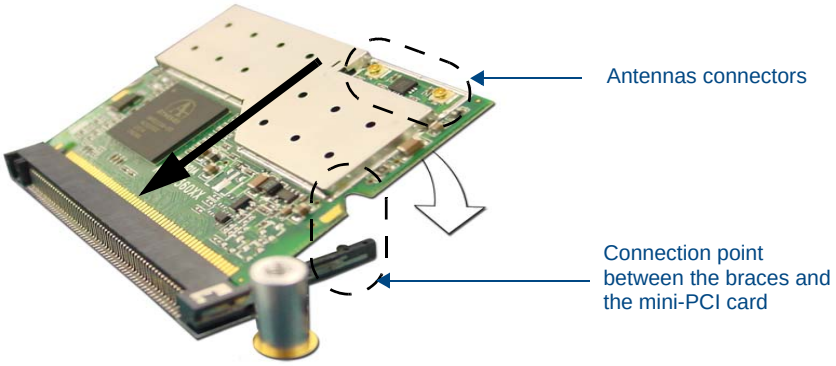


FIG. 20 Installation of the mini-PCI card connector on main board

7. Locate the terminal ends of the antennas and apply downward pressure to "snap" them onto their gold-tipped counterparts on the mini-PCI card (FIG. 20). Carefully push down on each connector to verify it is securely joined to the card.

NOTE

It is recommended that any upgrade of internal equipment be done simultaneously in order to reduce the risk of damage to internal components.

Step 3: Install the Compact Flash Memory Card upgrade

1. Discharge any static electricity from your body by touching a grounded metal object and then locate the existing Compact Flash card (*factory-shipped with 128 MB*) on the main board (FIG. 21 for Table Top panels and FIG. 24 for Wall Mount panels).

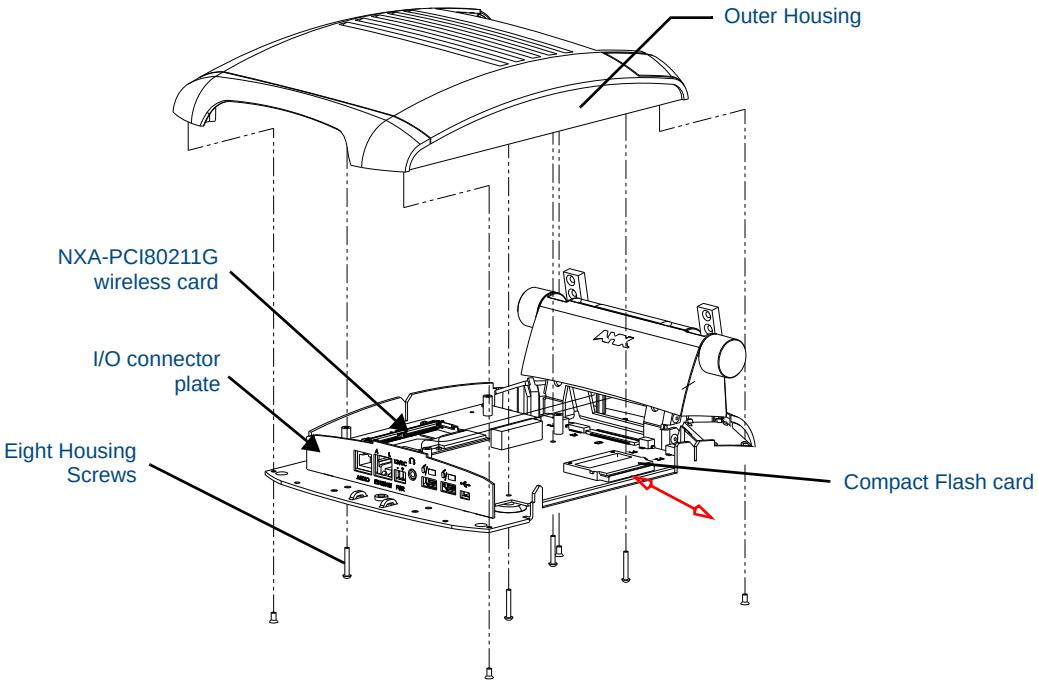


FIG. 21 Location of the Compact Flash card and I/O plate on NXT

2. Insert the tip of a grounded flat-head screwdriver into one of the card removal grooves (located on either side of the existing card), and gently pry the card out of the slot (FIG. 22). Repeat this process on the opposite card removal groove. This alternating action causes the card to "wiggle" away from the on-board connector pins.

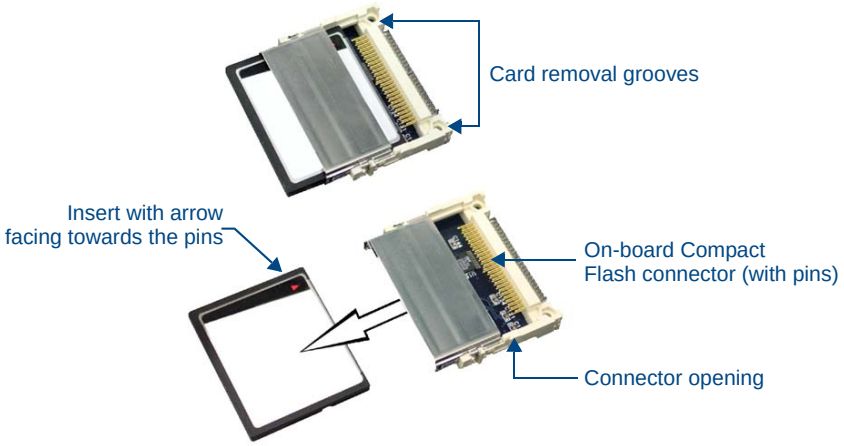


FIG. 22 Removing/installing a Compact Flash Memory card

3. Grip the old card by its sides and then carefully pull it out of the slot.
4. Remove the new CF memory card from it's anti-static bag.
5. Grip the sides of the new CF memory card and firmly insert it into the slot opening (with the arrow facing towards the pins) until the contact pins are completely inside the flash card and it is then securely attached to the pin sockets.
6. To complete the upgrade process, close and resecure the panel enclosure using the procedures in the following step.

NOTE

Any new internal card upgrade is detected by the panel only after power is cycled.

Step 4: Close and Resecure the NXT Panel Enclosure

1. Obtain the I/O connector plate and slide it back into position (FIG. 21).
2. Resecure the Stereo Output nut back onto the new Stereo Output jack onto the I/O plate.
3. With the components securely installed, tilt the LCD back to a 45° and gently slide-on the outer housing (towards the LCD) until the it is aligned over the installation holes and the tilt bracket prevents any further forward movement (FIG. 17).
4. Gently press down on the housing (toward the base) until it is securely positioned over the circuit board and covers base.

CAUTION

Use caution when re-installing the outer housing. Improper re-installation can cause damage to the internal speakers.

5. While holding the outer housing and base plate in place, turn the panel back over until the LCD lies facedown on a soft cloth and the under-side of the base is exposed.
6. Insert and secure the eight Housing Screws (using a grounded Phillips-head screwdriver) into their respective locations (FIG. 17).
7. Replace any adhesive plastic "feet" that might have been removed during the removal process of the outer housing. *These "feet" must be placed back onto their original locations so they can fit into their provided openings on the Battery Base.*
8. Grasp both the LCD and housing and then rotate the entire unit back onto a flat surface.
9. Insert all connectors and apply power.

Installation and Upgrade of the Internal NXD Components

Upgrading the components within a WallMount panel involves removing the rear plastic outer housing (back box), removing and/or installing an existing component, and then placing the back box back onto the NXD panel, as described in the following sections.

Step 1: Remove the existing NXD Outer Housing

1. Carefully detach all connectors from the side of the touch panel and remove the front magnetic faceplate from the NXD unit by firmly gripping the faceplate and pulling outwards, while applying a small amount of pressure to remove it from the main unit.
2. Place the LCD facedown onto a soft cloth to expose the under-side of the unit (FIG. 23). This step helps prevent scratching of the LCD.
3. Unscrew the Stereo Output nut from the Stereo Output jack.
4. Remove the I/O connector plate by using a grounded Phillips-head screwdriver to remove the two screws and slide the I/O connector plate away from the back box housing.

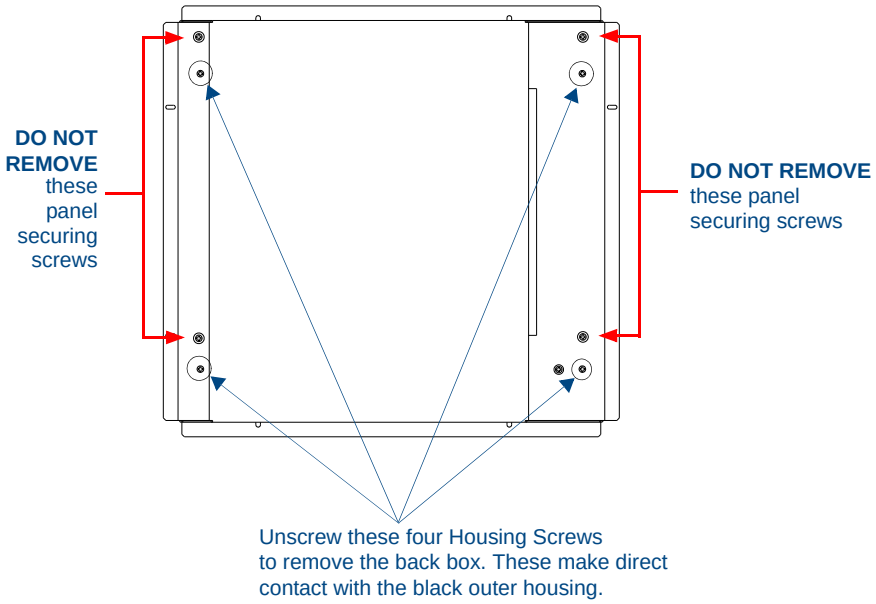

DO NOT REMOVE these panel securing screws
DO NOT REMOVE these panel securing screws
Unscrew these four Housing Screws to remove the back box. These make direct contact with the black outer housing.

FIG. 23 Location of the securing screws on an NXD panel

CAUTION

DO NOT REMOVE THE PANEL SECURING SCREWS. These screws secure the LCD to the metallic casing.

5. Unscrew the four pan-head Housing Screws from the rear of the NXD unit (FIG. 23) and gently remove the outer housing. These four screws secure the back box to the internal panel casing.

Step 2: Install the new 802.11g mini-PCI Wireless card (NXD)

1. Complete the procedures outline within *Step 2: Install the 802.11g mini-PCI Wireless Card* section on page 16 and then continue with the following step.

Step 3: Install the new Compact Flash Memory card (NXD)

Complete the procedures outline within *Step 3: Install the Compact Flash Memory Card upgrade* section on page 17 and then continue with the following step.

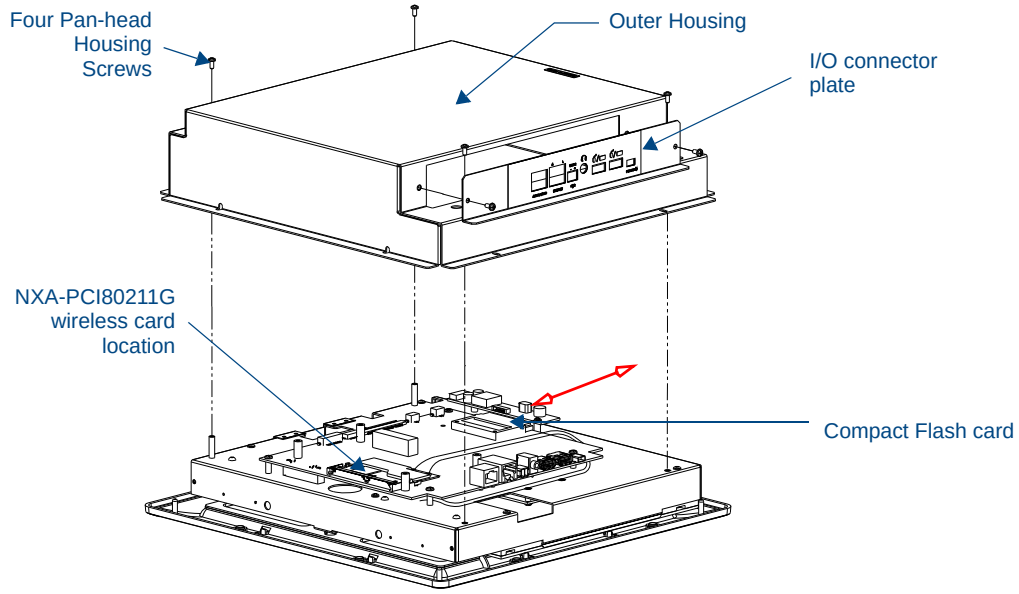


FIG. 24 Location of the Compact Flash card and I/O plate on NXD

Step 4: Close and Resecure the NXD Panel Enclosure

1. With the components securely installed, gently place the outer housing back onto the metallic panel casing (with the connector opening on the right-side of the panel) and align the four pan-head Housing Screw holes along the edges of the outer housing.

CAUTION

Use care not to bend or damage any antenna connections while replacing the outer housing.

2. Insert and secure the four pan-head Housing Screws into the pre-drilled holes along the edges of the NXD unit by using a grounded Phillips-head screwdriver.
3. Reinstall the I/O connector plate by aligning all connectors to their respective locations.
4. Secure the I/O connector plate using a grounded Phillips-head screwdriver and then twist the Stereo Output nut back into the Stereo Output jack.

NXT-BP Power Pack (FG2255-10)

The NXT-BP Power Pack (FIG. 25) is a rechargeable Lithium-Ion "smart" battery used to provide power to the NXT Modero panel through the NXA-BASE/B Battery Base. This battery incorporates an on-board battery life indicator. The NXT-BP battery can be charged through either the base (when connected to the Modero panel) or through an optional NXT-CHG Modero Power Station.

Extra NXT-BP Power Packs can be purchased separately as an optional accessory.

FIG. 25 NXT-BP Power Pack

Product Specifications

NXT-BP Specifications	
Dimensions (HWD):	• 0.69" x 3.50" x 5.81" (1.75 cm x 8.89 cm x 14.76 cm)
Power (Voltage):	• 11.1 Volts (nominal)
Weight:	• Single NXT-BP Power Pack: 1.0 lbs (0.45 kg)
Features:	• Battery Usage: 4 to 8 hours (time is usage dependant) • Charge Capacity: 6300mAh
Operating / Storage Environment:	• Operating Temperature: 0° C (32° F) to 40° C (104° F) • Operating Humidity: 20% - 85% RH • Storage/Discharge Temperature: -20° C (-4° F) to 60° C (140° F) • Storage Humidity: 5% - 85% RH

NXA-BASE/B Battery Base Kit (FG2255K)

The NXA-BASE/B Battery Base is a Modero accessory that allows the Modero Table Top touch panels (NXT) to function off the collective charge of two internally connected NXT-BP batteries (**FG2255-10**). The base provides both power and battery information to the panel via the panel interface connector (FIG. 26). The NXT-BP batteries can be charged through either the base (only when connected to the NXT touch panel) or through an optional NXT-CHG Modero Power Station.

FIG. 26 NXA-BASE/B and NXT-BP combo

This base also comes as part of a NXA-BASE/B Kit that contains one (1) battery base and two batteries. The accompanying batteries can be charged through either the base or optional NXT-CHG Battery Charger (**FG2250-50**). Refer to the *Installing the NXA-BASE/B to an NXT Modero Panel* section on page 23 for more detailed installation and usage instructions.

Product Specifications

NXA-BASE/B Specifications	
Dimensions (HWD):	• 1.13" x 8.63" x 11.81" (2.86 cm x 21.91 cm x 30.00 cm)
Power Requirements:	• 2.7 A @ 12 VDC (max power draw while charging)
Weight:	• Base unit: 1.25 lbs (0.567 kg) • Base and 2 batteries: 3.23 lbs (1.47 kg)
Features:	• Charge time for two depleted batteries ~ 5 - 8 hours (***when NXT panel is in Sleep mode***) • Must be connected to the Modero unit utilizing a 12 VDC-compliant power supply
Operating / Storage Environment:	• Operating Temperature: 0° C (32° F) to 40° C (104° F) • Operating Humidity: 20% - 85% RH • Storage Temperature: -20° C (-4° F) to 60° C (140° F) • Storage Humidity: 5% - 85% RH
Other AMX Equipment:	• NXT-CHG Kit (**FG2250-50K**): Charger (**FG2250-50**) and 2 NXT-BP batteries (**FG2255-10**) • NXT-BP battery pack (**FG2255-10**) • NXT-CHG battery charger (**FG2250-50**)

NOTE

It is recommended to fully charge the batteries before their initial use.

Checking the NXT-BP battery charge

1. Press the Battery Life Indicator button (FIG. 27) once to illuminate the Battery Life LEDs and display the percent charge remaining on the battery (this indication lasts a few seconds).

FIG. 27 NXT-BP (showing Battery Life Indicator button and charge)

2. Repeat the above step for each NXT-BP battery.
3. Charge the NXT-BP battery by either inserting it into the battery base or from within the optional NXT-CHG charger (which can sequentially charge up to two batteries).

NOTE

If the 25% LED is blinking, this indicates there is less than 5% of a charge remaining on the battery.

Installing the NXA-BASE/B to an NXT Modero Panel

The battery base must be installed onto the NXT panel without any NXT-BP batteries.

1. Power Off the panel before attempting to use the NXA-BASE/B.
2. Place the empty battery base onto a flat/level surface.
3. Verify the alignment of the Panel Interface connectors between the panel (male connector) and base (female connector) (FIG. 28).

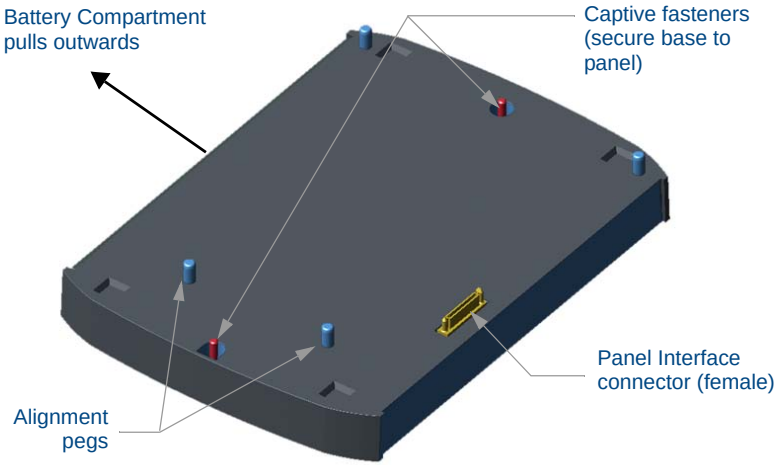

Battery Compartment pulls outwards
Captive fasteners (secure base to panel)
Panel Interface connector (female)
Alignment pegs

FIG. 28 NXA-BASE/B showing Panel Interface and connector locations

4. Carefully place the Modero panel over the base alignment pegs (FIG. 28 and FIG. 29).

CAUTION

The battery base cannot be "hot-swapped". A panel receiving power through a connected 12 VDC-compliant power supply cannot have a battery base installed onto the bottom of the panel while powered. POWER OFF the panel before installing the NXA-BASE/B.
"Hot swapping" could damage the base and cause it not to be recognized by the panel.

5. Gently apply downward pressure until the panel is securely mounted to the battery base (FIG. 29).

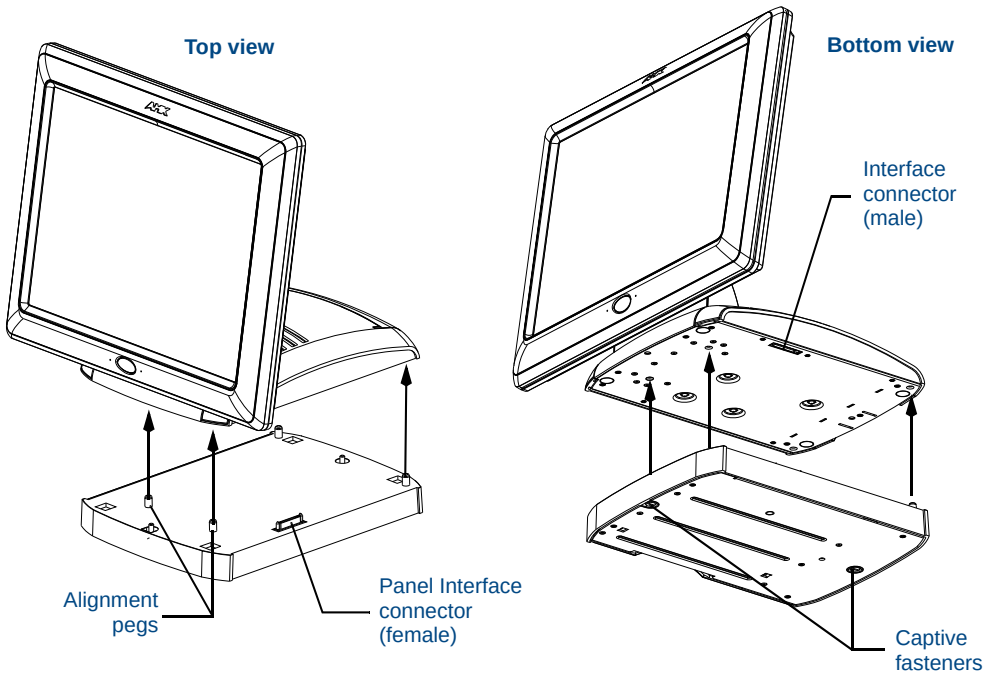


FIG. 29 NXA-BASE/B shown aligning with NXT panel

6. Firmly grip both the panel (from the side) and battery base (from below) together.
7. Gently place the touch panel LCD facedown onto a soft cloth (this prevents scratching of the LCD while the battery base is being secured).
8. Locate the captive fasteners on the underside of the battery base by angling the base combo slightly forwards.
9. Secure each captive fastener head using a grounded flat-head screwdriver until the NXA-BASE/B is securely attached to the underside of the NXT Modero touch panel.
10. Firmly grip the panel LCD/base combo and gently rotate the unit back onto the base.

Installing an NXT-BP into the NXA-BASE/B

The battery base does not directly connect to a power supply, but rather receives its power directly from the Modero panel, through the Panel Interface connector.

NOTE

Remove any connectors from the rear of the Modero NXT panel before continuing with the installation of the batteries. Power can only be supplied after the batteries have been installed.

1. With the panel mounted on the battery base, open the battery compartment (FIG. 30) by pulling the handle outwards. This compartment houses two NXT-BP batteries.

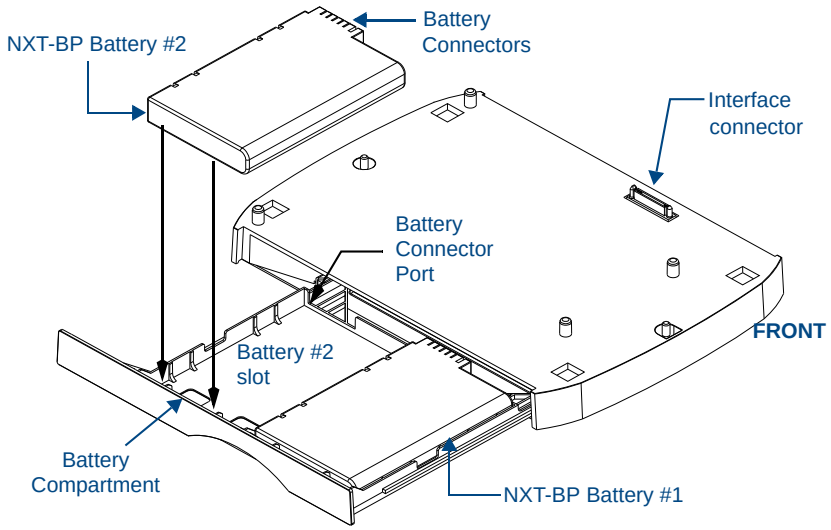


FIG. 30 Battery installation procedure

2. Install the NXT-BP battery. label-side down.
3. Align the battery connectors with the corresponding battery connector port (located inside the battery compartment), as shown in FIG. 30.
4. Insert the NXT-BP battery until the connectors securely fit into the battery connector port.
5. Repeat steps 2 through 4 for the other battery.
6. Apply a small amount of pressure to close the battery compartment until the compartment latches.
   - After a few seconds, the panel will turn On and the AMX logo will appear (indicating the panel is receiving power.

Charging the NXT-BP batteries with the NXA-BASE/B

1. Follow the procedures from the previous sub-section to attach the NXT touch panel to the NXA-BASE/B.
2. Insert each battery into the battery compartment shown in FIG. 30.
3. Insert a 2-pin connector from a power supply to the rear PWR connector on the NXT Modero panel.

   The charge status bargraph indicators, on the Battery Base page, indicate when the batteries are fully charged.

NOTE

The NXA-BASE/B will only charge batteries when the NXT panel is in Sleep mode.

NXT-CHG Battery Charger Kit (FG2255-50K)

The NXT-CHG Kit includes one charger and two batteries. The optional NXT-CHG Modero Power Station (FIG. 31) is a two-slot, stand-alone battery charger that can be used to recharge up to two NXT-BP batteries. The batteries are charged in the order they are inserted into the charger. The NXT-CHG Slot 1 has the feature of being able to completely discharge and recharge (*recalibrate*) a battery.

FIG. 31 NXT-CHG Kit (consists of one NXT-CHG charger and two NXT-BP batteries)

Product Specifications

NXT-BP and NXT-CHG Specifications	
Dimensions (HWD):	• 1.13" x 8.63" x 11.81" (2.86 cm x 21.91 cm x 30.00 cm)
Power Requirements:	• NXT-BP Battery Voltage - 11.1 Volts • NXT-CHG: 90 - 264 VAC, 47-63 Hz, Single Phase (using the included 24 VDC power supply)
Weight:	• 0.57 lbs (0.26 kg)
Features:	• Charge time for two depleted batteries: ~ 5 hours • Charge Rate: 2.5 A @ 12 VDC • 2-Bays: Sequential charging • LED: One LED indicator in front of each bay which conveys the status of that bay. Refer to the *Reading NXT-CHG LED Indicator* section for more information. • Recalibration pushbutton (located between the bays): Initiates recalibration sequence in the **left bay only**. • Recalibration Time: less than 9 hours
Other AMX Equipment:	• NXT-CHG Kit (**FG2250-50K**): - 1 charger and 2 NXT-BP batteries • NXT-BP battery pack (**FG2255-10**) (additional)

The batteries are charged in the order they are inserted into the NXT-CHG. SLOT 1 of the NXT-CHG has the ability to completely discharge and recharge (*recalibrate*) a battery.

NOTE

Recalibration improves the reporting accuracy of the battery charge back to the Modero panel.

Powering the NXT-CHG

The NXT-CHG Smart Battery Charger uses an included power supply to charge inserted batteries.

1. Connect the rear of the NXT-CHG to the power adapter.
2. Connect the power adapter to the provided power cord (*with plug*).
3. Provide power to the unit by connecting the power cord (*with plug*) into a power outlet that meets the requirements outlined in the *Specifications* section for the NXT-CHG.

Reading NXT-CHG LED Indicator

FIG. 32 shows the components on the NXT-CHG Smart Battery Charger.

FIG. 32 Component locations on the NXT-CHG

There is one LED indicator on the front of each battery slot that indicates the status of that slot. The blink patterns for these LEDs are described in the following table:

- **Off**: No battery detected.
- **Green Flashing**: Fast charging.
- **Green Solid**: Fully charged.
- **Yellow Flashing**: Recalibration in process.
- **Yellow/Green**: Recalibration complete.
- **Yellow Solid**: Standby (waiting for other battery to charge).
- **Red Flash**: Error (problem with either the battery connection to the internal slot, or with the battery itself).

Charging the NXT-BP batteries using the NXT-CHG

1. Review the *Checking the NXT-BP battery charge* section on page 22 to confirm the percentage of charge remaining on the batteries.
2. Provide power to the charger (as outlined in the *Powering the NXT-CHG* section on page 26).
3. Align the battery connector with the corresponding charge slot within each of the two NXT-CHG slots.
4. Firmly insert the battery into the desired slot until the battery is both securely located within the slot and there is activity from the corresponding Slot LED. Refer to the *Reading NXT-CHG LED Indicator* section on page 27 section for LED information.

Recalibrating the batteries

The recalibration process increases the accuracy of the battery charge level. Recalibration of the batteries is only done upon request from the Modero on-screen Battery Base page. Refer to the *Battery Base Page* section on page 93 for more detailed Battery Base page information.

NOTE

Recalibration can only be done with Slot 1 on the NXT-CHG.

1. Place the selected battery securely into Slot 1 (left slot) until there is activity on the Slot 1 LED.
2. Push the **Recalibration** pushbutton (located between the two slots) to initiate recalibration in the left bay only.

Installation Procedures: NXD-1200V Panels

Overview

NXT panels are mounted onto flat (horizontal) surfaces in either a stand-alone or combo (NXT atop an NXA-BASE/B battery base) configuration. NXD panels are installed into either a pre-wall surface (using a CB-TP12 conduit/wallbox) or a solid surface (using either solid surface or drywall screws).

NOTE

It is recommended that if you are planning on upgrading your panel components (flash card and wireless), you do so before beginning any panel installations.

Unpacking the Panel

1. Inspect and confirm the contents of the shipment box to verify that you have all specified parts. Refer to the *Specifications* table (page 2) for more information about included accessories and other AMX equipment.
2. Carefully remove the panel from the shipping box.
3. Carefully peel the protective plastic cover from the LCD.

NOTE

If the protective plastic LCD cover is not removed, the panel may not respond properly to touch points on the LCD or allow proper screen calibration.

Installing the Internal Components

Installation of the internal components such as the upgraded Compact Flash memory and NXA-PCI80211G Wireless card are described in detail within the following sections:

- *Step 2: Install the 802.11g mini-PCI Wireless Card* section on page 16.
- *Step 3: Install the Compact Flash Memory Card upgrade* section on page 17.

Upgrading to the MB-TP12 VESA Mounting Kit

Upgrading the existing back box with the new VESA Mounting Kit on the 12" (**FG031-50**) panel requires 3 main processes:

- Removing the pre-existing back box and installing the new VESA back box.
- Threading cables through the strain relief grommet opening in the rear plastic cover.
- Finalizing the installation of the NXD (with VESA back box and cables) into the plastic cover, securing both components, and finalizing the strain relief grommet installation.

NOTE

Only overall dimensions and FG product numbers are different. The new MB-TP Universal VESA Mounting Box uses a standard VESA installation pattern of 75 mm between holes. VESA mounts that conform to this pattern can be used on the MB-TP Housing.

Removing the Original Modero Back Box

1. Detach all connectors from the side of the touch panel.
2. Remove the magnetic faceplate from the NXD unit by gripping the faceplate and pulling outwards while applying a small amount of pressure to remove it from the main unit.
3. Place the LCD face-down on a soft cloth to expose the back of the panel and prevent scratching of the LCD.
4. Unscrew the Stereo Output nut from the Stereo Output jack.
5. Remove the I/O connector plate by using a grounded Phillips-head screwdriver to remove the two screws and slide the I/O connector plate away from the back box housing.

6. Remove the four pan-head Housing Screws from the rear of the NXD unit (FIG. 33). These screws secure the back box to the internal panel casing.

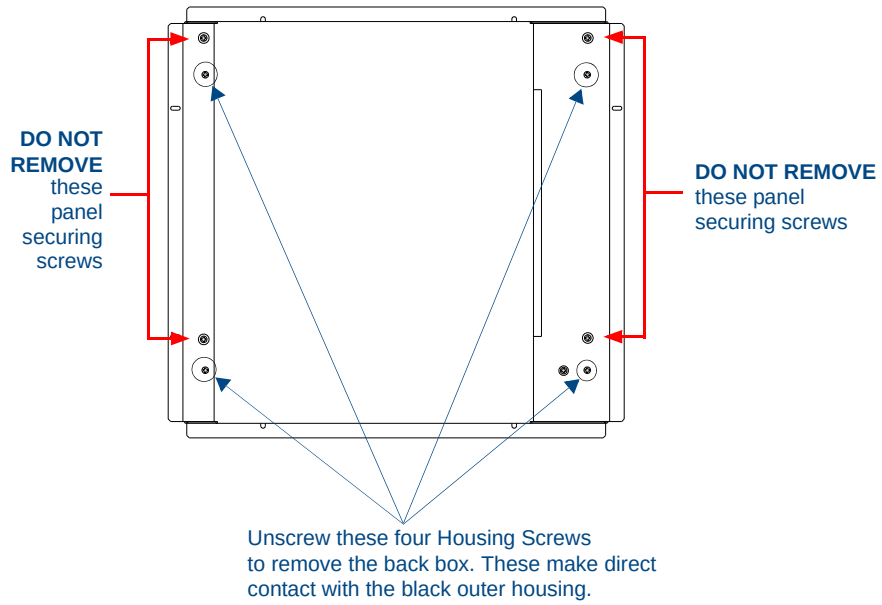

DO NOT REMOVE these panel securing screws
DO NOT REMOVE these panel securing screws
Unscrew these four Housing Screws to remove the back box. These make direct contact with the black outer housing.

FIG. 33 Location of the attachment screws on the NXD back box

***DO NOT REMOVE THE FOUR PANEL SECURING SCREWS**. These screws secure the LCD to the metallic casing underneath.*

7. Lift the back box housing to separate it from the internal panel casing.

Installing the MP-TP12 Back Box

1. Unscrew the four pan-head Housing screws (#8-32) from the MP-TP12 rear plastic cover.
2. Gently place the MP-TP12 back box over the internal panel casing (with the cable routing hole on the right-side of the panel).
3. Re-install and secure the four pan-head Housing Screws into their pre-drilled holes along the edges of the MB-TP12 back box (FIG. 34) and secure them using a grounded Phillips-head screwdriver.
4. Place the I/O connector plate back over the connector opening and align the connector locations.
5. Re-secure the I/O connector plate (using a grounded Phillips-head screwdriver) and re-secure the Stereo Output nut on the Stereo Output jack.

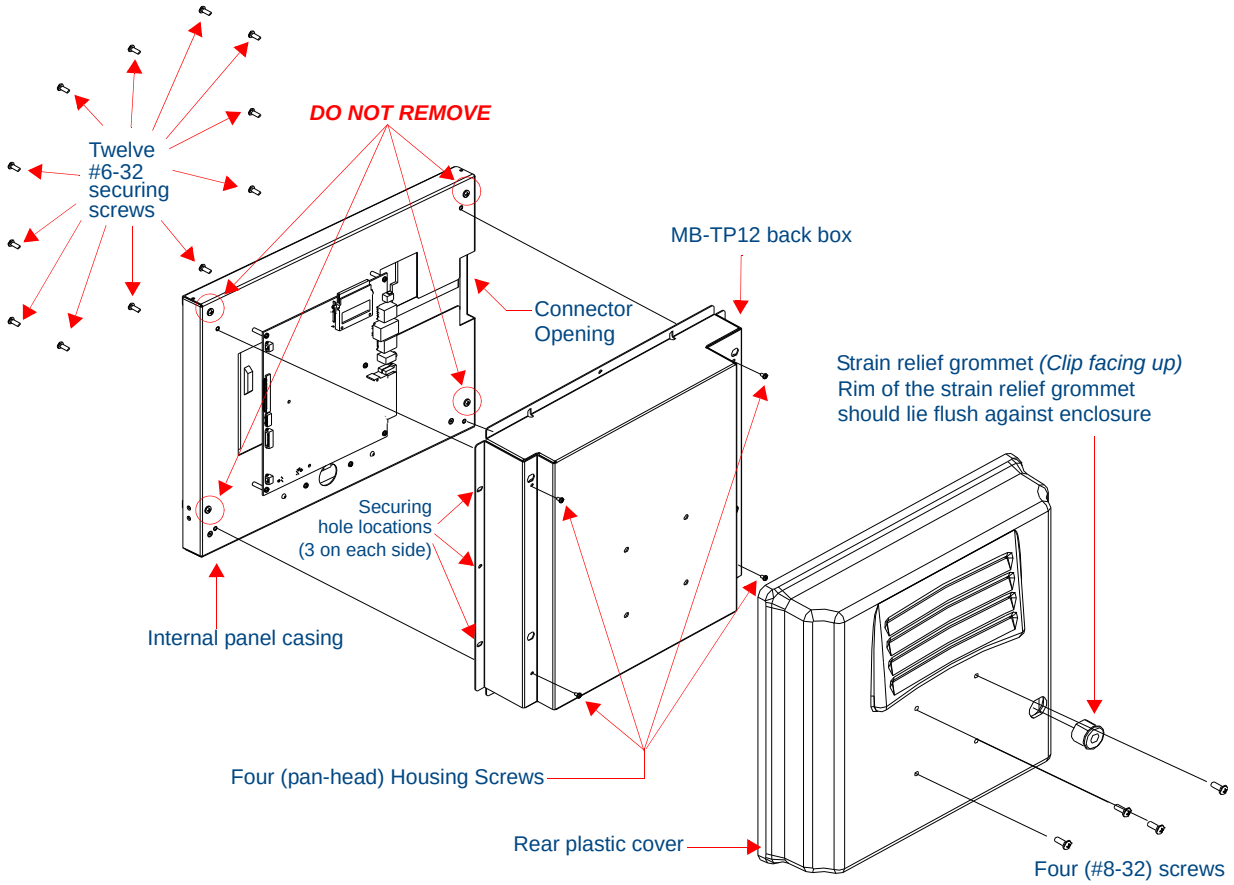

DO NOT REMOVE
Twelve #6-32 securing screws
MB-TP12 back box
Connector Opening
Strain relief grommet (Clip facing up)
Rim of the strain relief grommet should lie flush against enclosure
Securing hole locations (3 on each side)
Internal panel casing
Four (pan-head) Housing Screws
Rear plastic cover
Four (#8-32) screws

FIG. 34 Location of the attachment screws on the NXD back box and VESA housing

Cable Installation for the MP-TP12 Back Box

1. Connect the cable connectors (RJ-45, Ethernet, and any other audio/video wiring) to their respective locations along the side of the touch panel.
2. Thread the incoming cables through the strain relief grommet opening on the rear plastic cover (FIG. 34).

Finalizing the installation

1. Gently place the rear plastic cover over the NXD panel (with LCD and MB-TP12 back box).
2. Insert the protruding cables, coming out from the opening on the rear plastic cover, into the open strain relief grommet.
3. Allow some slack/length on these cables as a service loop. This service loop provides enough cable length so you can later remove the NXD (with connected cables) from the rear plastic cover.

WARNING

VERIFY THE LENGTH AND LOCATION OF THE INSERTED CABLES. ONCE THE STRAIN RELIEF GROMMET IS CLOSED, IT IS DIFFICULT TO RE-OPEN.

4. Carefully apply pressure to close the strain relief grommet over the desired cable location.

CAUTION

Verify the Strain Relief Grommet is securely closed over the cables and the clip is facing the correct direction (upwards). The process of securing the strain relief grommet may require the use of pliers. Also verify the length and location of the inserted cables. Once the strain relief grommet is closed, it is difficult to re-open.

5. Firmly push the Strain Relief Grommet into the opening (toward the inside) until the rim is securely flush against the back of the rear plastic cover (FIG. 34).

6. Securely grasp both sides of the NXD panel (with LCD, MB-TP12 back box, and attached cables), rotate the entire unit over, and lie it on a flat level surface.
7. Note the available mounting contact surface area on the rear plastic cover of the MB-TP12 (FIG. 35). This area represents the space available for use with a VESA connector plate.

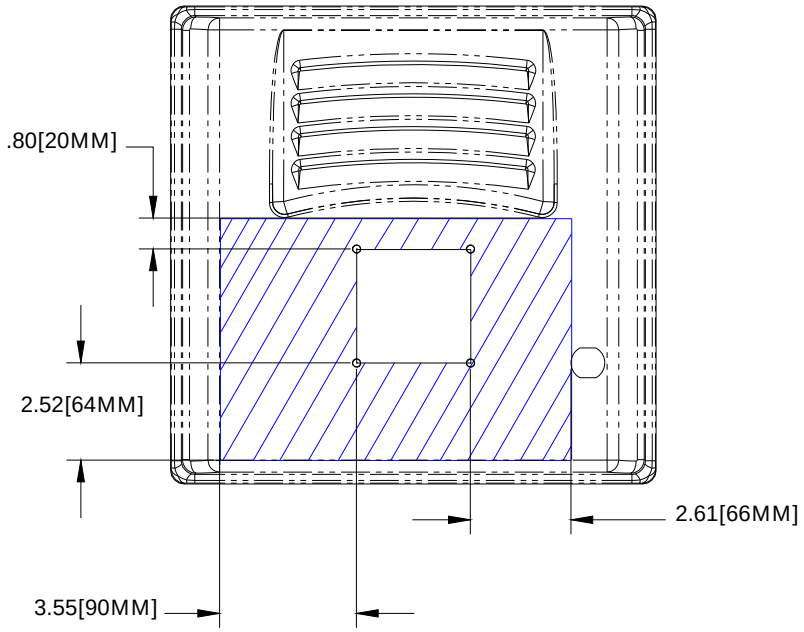


FIG. 35 MB-TP12 Mounting contact surface area

8. Insert and secure the twelve #6-32 securing screws into their pre-drilled holes along the edges of the NXD unit (FIG. 34). This step secures the NXD unit to the rim of the rear plastic cover.
9. Align a VESA mount connector (purchased separately) to the four #8-32 screw holes on the back of the rear plastic cover (FIG. 34).
10. Insert the four provided #8-32 screws through the VESA mount's four holes and then into the pre-drilled holes on the rear plastic cover.

CAUTION

When installing a VESA mount to the rear plastic cover, use only the AMX provided #8-32 screws.

11. Secure these four #8-32 screws to the rear plastic cover by using a grounded Phillips-head screwdriver. This step secures the VESA mount to the rear of the panel.

Refer to your particular VESA mount manufacturer's installation procedures for further surface mounting procedures.

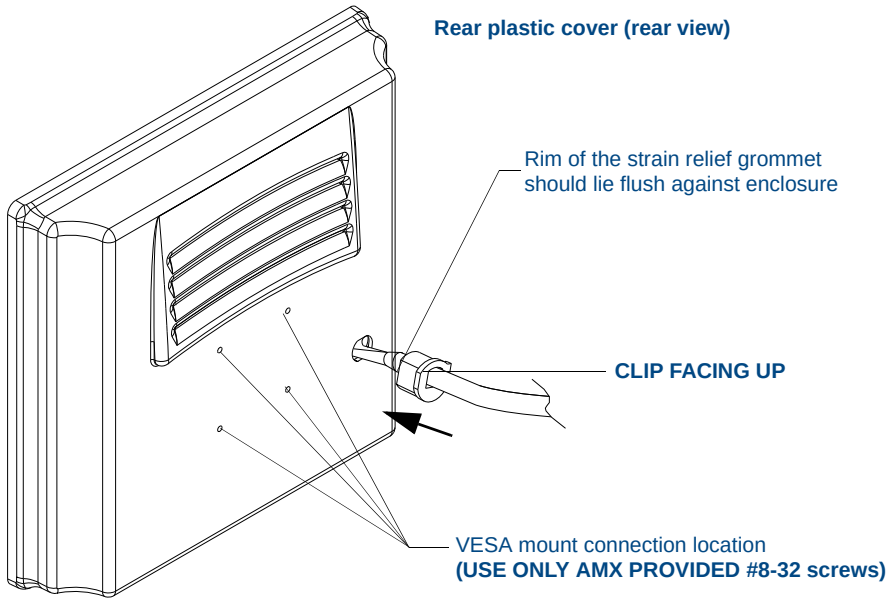

Rear plastic cover (rear view)
Rim of the strain relief grommet
should lie flush against enclosure
CLIP FACING UP
VESA mount connection location
(USE ONLY AMX PROVIDED #8-32 screws)

FIG. 36 Installation of grommet into the rear plastic enclosure

Pre-wall Installation of the Conduit Box

Wall Mount panels (NXDs) are contained within a metallic outer housing (back box). This back box is **not removed** when installing the NXD into a conduit box (CB-TP12). The back box is ***only*** removed to either gain access for the replacement of the Memory/Compact Flash or upgrade the unit with an MB-TP Universal VESA Mounting Kit.

WARNING

INSTALLER: LEAVE A GAP BETWEEN THE STUD AND CONDUIT BOX TO ACCOMMODATE THE DRYWALL SHEETROCK. *This gap allows the installation of the drywall/sheetrock after the conduit box has been installed.*

The CB-TP12 conduit wallbox is an optional metallic box that is secured onto stud beams prior to the installation of a solid surface. Installation procedures and configurations can vary. This section describes the installation procedures for the most common installation scenario.

1. Fasten the CB-TP12 to a stud through the stud fastening holes, located on the inside of the conduit box (FIG. 37), by using either nails or screws.

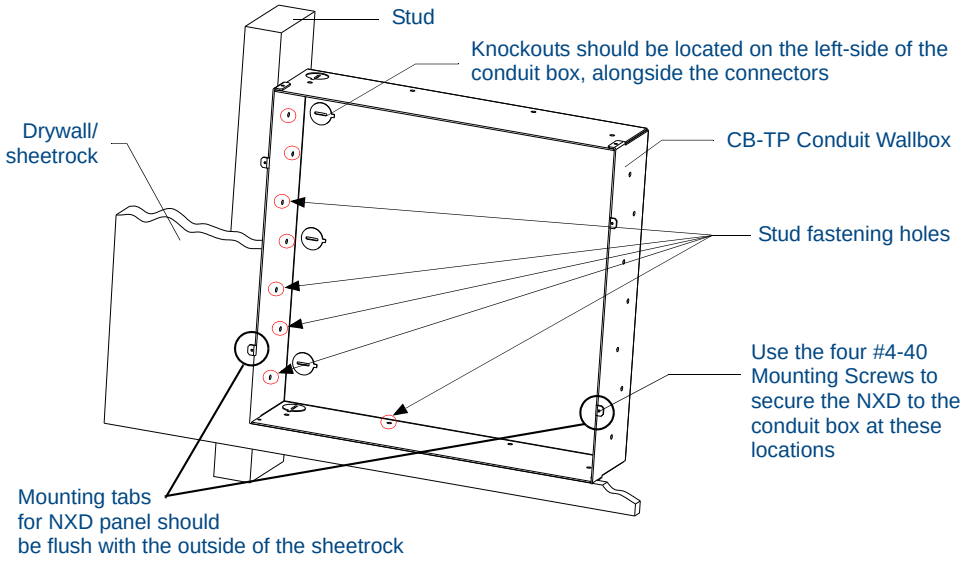

Stud
Knockouts should be located on the left-side of the conduit box, alongside the connectors
Drywall/ sheetrock
CB-TP Conduit Wallbox
Stud fastening holes
Use the four #4-40 Mounting Screws to secure the NXD to the conduit box at these locations
Mounting tabs for NXD panel should be flush with the outside of the sheetrock

FIG. 37 Screw locations for conduit box attachment in a pre-wall installation

2. Remove any necessary wiring knockouts from the (optional) conduit box (**C** in FIG. 37) where the necessary cables are threaded through for connection to the touch panel.
3. Thread the incoming RJ-45, Ethernet, and any other audio/video wiring through the knockouts. Refer to the *Wiring Guidelines for the 1200V Panels* section on page 41 for pinout descriptions. Leave enough slack in the wiring to accommodate any re-positioning of the panel.
4. **Install the drywall/sheetrock before inserting the main NXD unit into the CB-TP12**.

Installation of the NXD Touch Panel

The NXD panel can be installed either directly into the (optional) CB-TP12 or other solid surface environment using the two different mounting options: drywall clips or solid surface screws. The following sections describe mounting the touch panel directly into a pre-wall installed conduit box, a solid surface or drywall, and optional NXA-RK Rack Mount Kit.

Installing the NXD panel within a Conduit Box

The conduit box must be mounted prior to continuing this section. Refer to the procedures in the *Pre-wall Installation of the Conduit Box* section on page 33 for detailed pre-wall installation instructions. *Verify that all necessary cables have been threaded through the knockouts on the conduit box and the connections have been tested prior to installation of the NXD panel.*

1. Remove the magnetic faceplate/bezel (**A** in FIG. 38) from the main NXD unit (**B** in FIG. 38) by gripping the faceplate and pulling with gentle outward force.

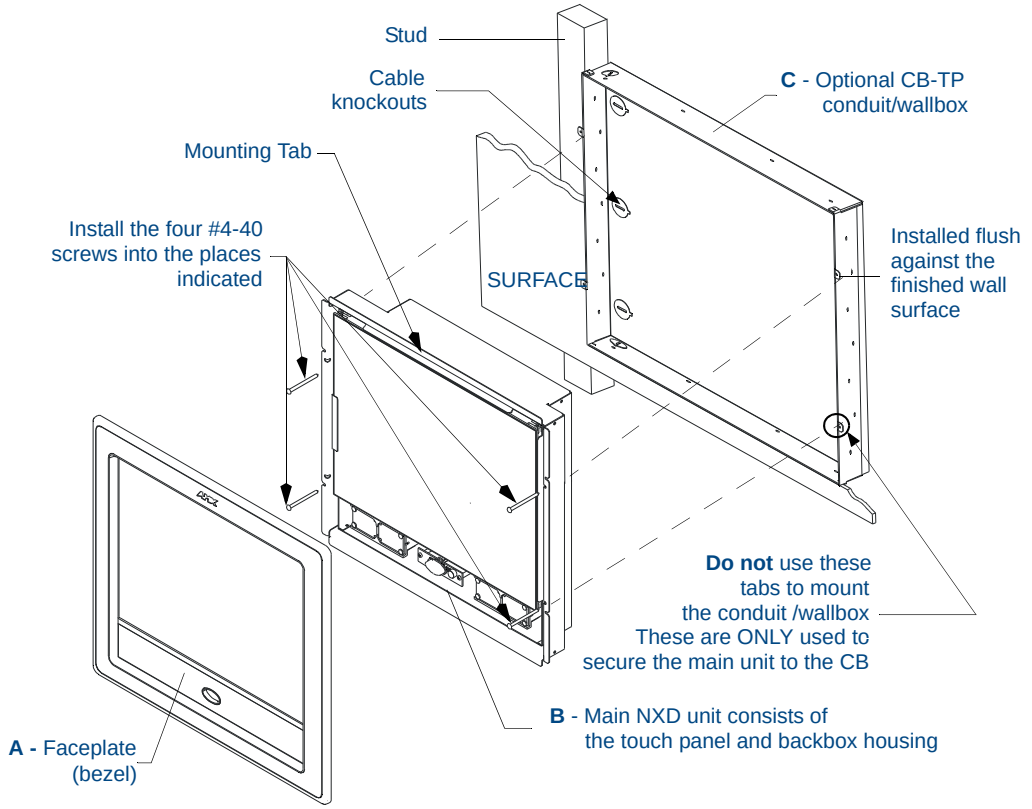

Stud
Cable knockouts
C - Optional CB-TP conduit/wallbox
Mounting Tab
Install the four #4-40 screws into the places indicated
SURFACE
Installed flush against the finished wall surface
Do not use these tabs to mount the conduit /wallbox These are ONLY used to secure the main unit to the CB
B - Main NXD unit consists of the touch panel and backbox housing
A - Faceplate (bezel)

FIG. 38 Wall Mount panel installation configuration for pre-existing conduit/wallbox in a pre-wall construction

2. Verify the incoming RJ-45, Ethernet, USB, and any other audio/video cables have been properly threaded through the wiring knockouts (from their terminal locations) on the conduit box.
   Leave enough slack in the wiring to accommodate any re-positioning of the panel.
3. Connect all data and power wiring connectors to their corresponding locations along the side of the (un-powered) NXD touch panel.
   - Verify the terminal end of the power cable is not connected to a power supply before plugging in the 2-pin power connector.
   - The USB connectors can be from either a USB extension cable, or a wireless USB RF transmitter.
4. Test the incoming wiring by connecting the panel connections to their terminal locations and applying power. Verify the panel is receiving power and functioning properly to prevent repetition of the installation.
5. Disconnect the terminal end of the power cable from the connected power supply.

NOTE

Don't disconnect the connectors from the touch panel. The unit must be installed with the attached connectors before being inserted into the conduit box.

6. Carefully slide the main unit (**B** in FIG. 38) into the conduit box, so the Mounting Tabs lie flush against the conduit box (**C** in FIG. 38).
7. Insert and secure the four securing #4-40 Mounting Screws into their corresponding holes located along the sides of the NXD (FIG. 37 and FIG. 38).
8. Place the magnetic faceplate (**A** in FIG. 38) back onto the main NXD unit (**B** in FIG. 38).
   Make sure to align the Microphone, Light, and PIR Motion sensor locations to their respective openings on the front bezel/faceplate.

9. Reconnect the terminal RJ-45, Ethernet, USB, and any optional audio/video wiring to their respective locations (*outside the conduit box*) on either the NXA-AVB/ETHERNET Breakout Box, Ethernet port, or NetLinx Master.
10. Reconnect the terminal power connector on the 12 VDC-compliant power supply and apply power.

Installing the NXD into drywall using Expansion Clips

Expansion clips are mounted through the four oval holes located at the top and bottom of the panel. As the screw is tightened, the clip bends toward the insertion hole and into the wall. This bending creates a "grip" on the wall by either pressing onto the wall or by securing the drywall between the housing and the drywall clip.

The most important thing to remember when mounting the NXD is that the outer frame (Mounting Tabs) must be installed flush against the mounting surface.

1. Prepare the area by removing any screws or nails from the drywall before beginning the cutout process.
2. Cut out the surface for the ***12-inch Wall Mount*** using the dimensions shown in FIG. 39. Be sure to cut out the four notches along the top and bottom areas to accommodate the four drywall expansion clips (provided).

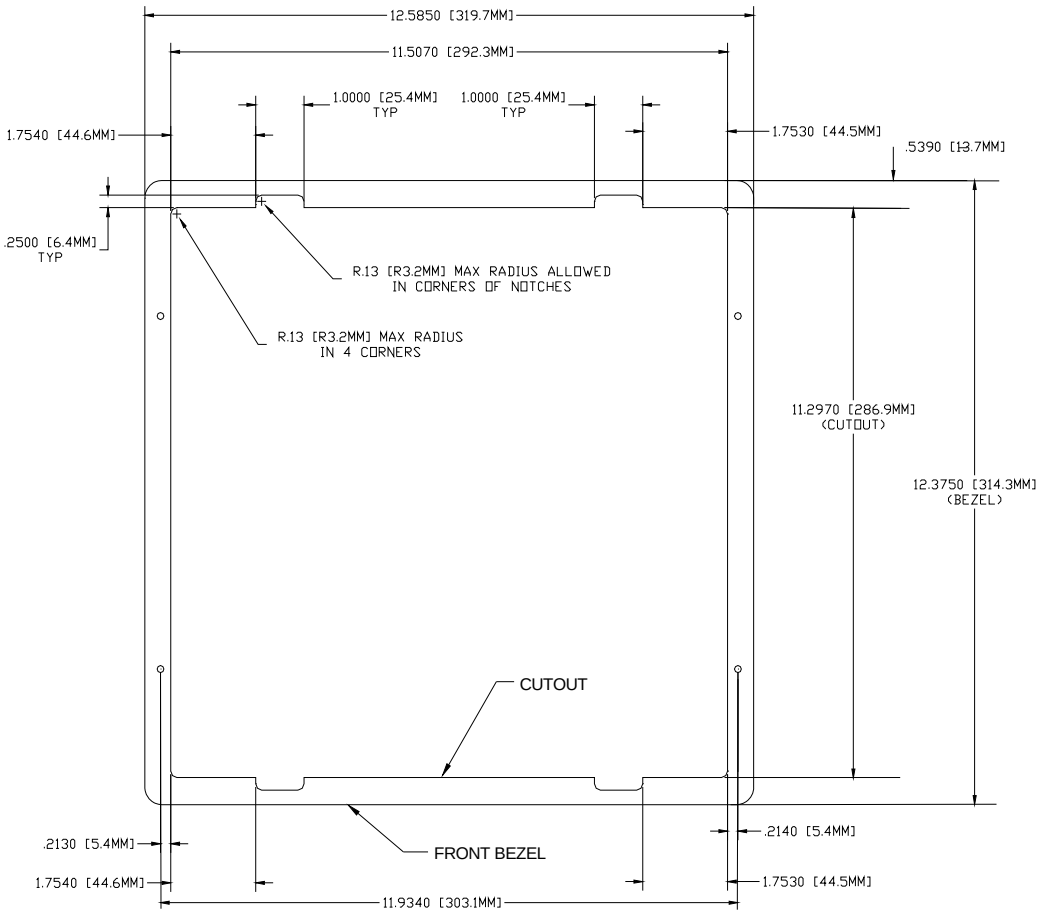


FIG. 39 NXD-1200V 12-inch Wall Mount panel dimensions using expansion clips

3. Remove the magnetic faceplate/bezel (**A** in FIG. 40) from the main NXD unit (**B** in FIG. 40) by gripping the faceplate and pulling with gentle outward force.

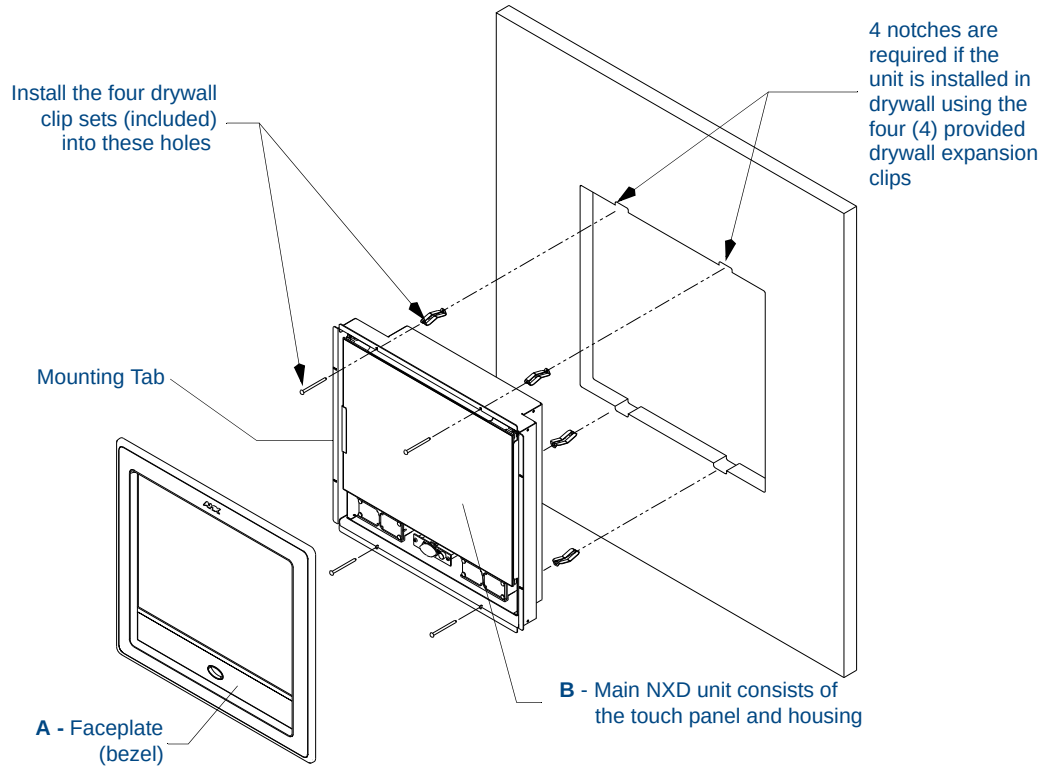

4 notches are required if the unit is installed in drywall using the four (4) provided drywall expansion clips
Install the four drywall clip sets (included) into these holes
Mounting Tab
B - Main NXD unit consists of the touch panel and housing
A - Faceplate (bezel)

FIG. 40 Wall Mount panel (NXD) installation configuration for drywall surfaces

4. Thread the incoming RJ-45, Ethernet, USB, and any other audio/video wiring (from their terminal locations) through the cutout opening. Refer to the *Wiring Guidelines for the 1200V Panels* section on page 41 for pinout descriptions.
   Leave enough slack in the wiring to accommodate any re-positioning of the panel.
5. Connect all data and power wiring connectors to their corresponding locations along the side of the (un-powered) NXD touch panel.
   - Verify the terminal end of the power cable is not connected to a power supply before plugging in the 2-pin power connector.
   - The USB connectors can be from a either a USB extension cable, or a wireless USB RF transmitter.
6. Test the incoming wiring by attaching the panel connections to their terminal locations and applying power. Verify the panel is receiving power and functioning properly to prevent repetition of the installation.
7. Disconnect the terminal end of the power cable from the connected power supply.

NOTE

Don't disconnect the connectors from the touch panel. The unit must be installed with the attached connectors before being inserted into the drywall.

8. Insert the four sets of drywall screws and expansion clips into the four oval notch locations along the top/bottom edges of the main unit (FIG. 40).
9. Carefully insert the main unit (with expansion clips) into the cutout until the Mounting Tabs on the NXD unit lie flush against the wall (FIG. 40).
10. Tighten the drywall clip sets (screws and clips) until the Mounting Tabs are securely fastened and flush against the wall.

WARNING

The drywall clip set must be re-ordered from AMX if the drywall clip is bent accidentally during an installation or removed during a re-installation.

11. Place the magnetic faceplate (**A** in FIG. 40) back onto the main NXD unit (**B** in FIG. 40).
Make sure to align the Microphone, Light, and PIR Motion sensor locations to their respective openings on the front bezel/faceplate.
12. Reconnect the terminal RJ-45, Ethernet, USB, and any optional audio/video wiring to their respective locations on either the NXA-AVB/ETHERNET Breakout Box, Ethernet port, or NetLinx Master.
13. Reconnect the terminal power connector on the 12 VDC-compliant power supply and apply power.

Installing the NXD into a Flat Surface using #4 screws

Mounting screws (#4, not included) are secured through circular holes located at the left and right sides of the NXD panel. **The most important thing to remember when mounting the NXD is that the outer frame (Mounting Tabs) must be installed flush against the mounting surface.**

- It is recommended that you cutout the surface slightly smaller than what is outlined in the installation drawings so that you can make any necessary cutout adjustments.

1. Prepare the area by removing any screws or nails from the surface before beginning the cutout process.
2. Cut out the surface for the ***12-inch Wall Mount*** using the dimensions shown in FIG. 41.

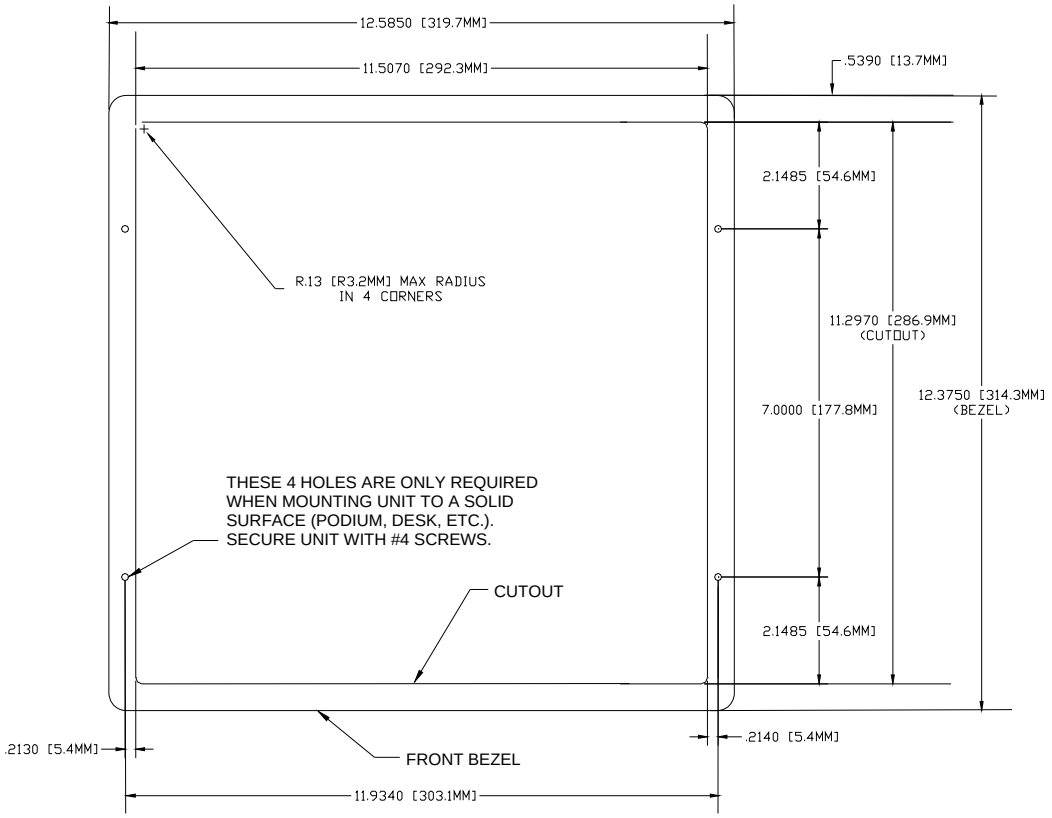


FIG. 41 NXD-1200V Wall Mount panel dimensions using #4 mounting screws

3. Remove the magnetic faceplate/bezel (**A** in FIG. 42) from the main NXD unit (**B** in FIG. 42) by gripping the faceplate and pulling with gentle outward force.

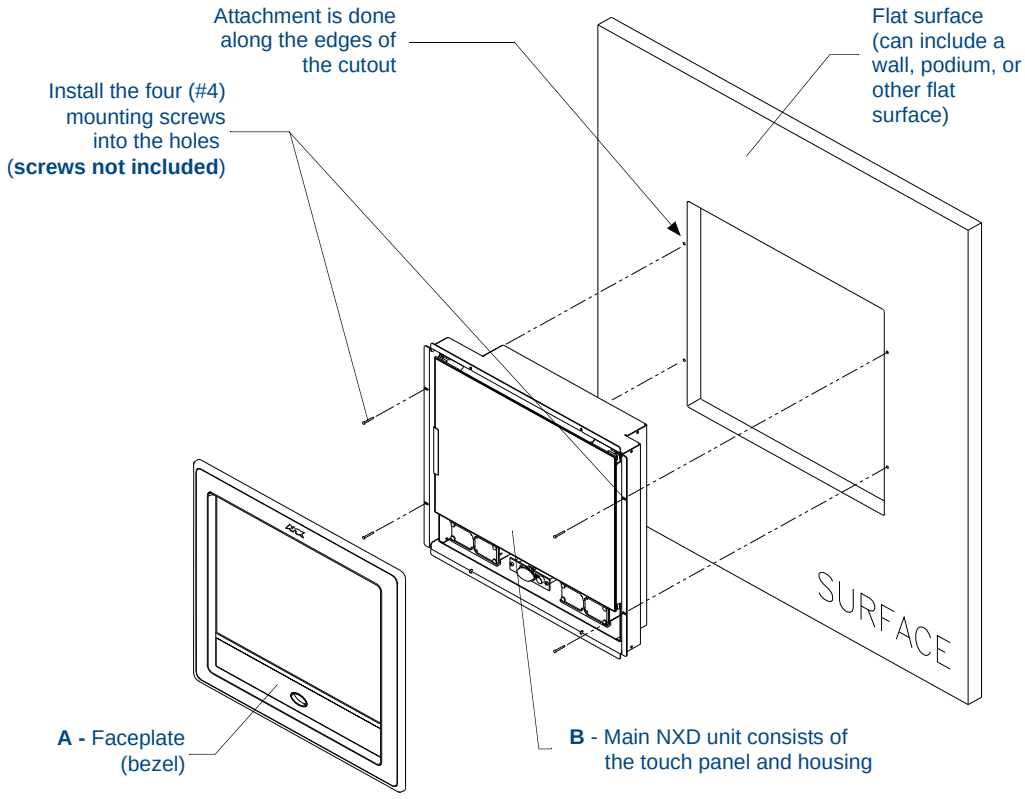

Attachment is done along the edges of the cutout
Flat surface (can include a wall, podium, or other flat surface)
Install the four (#4) mounting screws into the holes (**screws not included**)
SURFACE
A - Faceplate (bezel)
B - Main NXD unit consists of the touch panel and housing

FIG. 42 Wall Mount panel installation configuration for flat/solid surfaces

4. Thread the incoming RJ-45, Ethernet, USB, and any other audio/video wiring (from their terminal locations) through the cutout opening. Refer to the *Wiring Guidelines for the 1200V Panels* section on page 41 for pinout descriptions.
   Leave enough slack in the wiring to accommodate any re-positioning of the panel.
5. Connect all data and power wiring to their corresponding locations along the side of the (un-powered) NXD touch panel.
   - Verify the terminal end of the power cable is not connected to power supply before plugging in the 2-pin power connector.
   - The USB connectors can be from a either a USB extension cable, or a wireless USB RF transmitter.
6. Test the incoming wiring by connecting the panel connections to their terminal locations and applying power. Verify the panel is receiving power and functioning properly before finalizing the installation.
7. Disconnect the terminal end of the power cable from the power supply.

NOTE

Don't disconnect the connectors from the touch panel. The unit must be installed with the necessary connectors before being inserted into the solid surface.

8. Carefully slide the main unit into the cutout until the Mounting Tabs of the NXD unit lie flush against the wall.
9. Insert and secure the four #4 screws into their corresponding holes located along the sides of the NXD (using a grounded Phillips-head screwdriver) until the unit is secure and flush against the wall.
10. Place the magnetic faceplate (**A** in FIG. 42) back onto the main NXD unit (**B** in FIG. 42).
    Make sure to align the Microphone, Light, and PIR Motion sensor locations to their respective openings on the front bezel/faceplate.
11. Reconnect the terminal RJ-45, Ethernet, USB, and any optional audio/video wiring to their respective locations on either the NXA-AVB/ETHERNET Breakout Box, Ethernet port, or NetLinx Master.

12. Reconnect the terminal power connector on the 12 VDC-compliant power supply and apply power.

Installing an NXD into an (optional) Rack Mount Kit (NXA-RK12)

1. Remove the magnetic faceplate/bezel from the main NXD unit by gripping the faceplate and pulling with gentle outward force.
2. Thread the incoming RJ-45, Ethernet, USB, and any optional audio/video wiring through the opening in the equipment rack (from their terminal locations). Refer to the *Wiring Guidelines for the 1200V Panels* section on page 41 for pinout descriptions. Leave enough slack to accommodate any re-positioning of the panel.
3. Connect all data and power wiring connectors to their corresponding locations along the side of the (un-powered) NXD touch panel.
   - Verify the terminal end of the power cable is not connected to a power supply before plugging in the 2-pin power connector.
   - The USB connectors can be from a either a USB extension cable, or a wireless USB RF transmitter.
4. Test the incoming wiring by connecting the panel connections to their terminal locations and applying power. Verify the panel is receiving power and functioning properly to prevent repetition of the installation.
5. Disconnect the terminal end of the power cable from the connected power supply.

NOTE

Don't disconnect the connectors from the touch panel. The unit must be installed with the necessary connectors before being inserted into the equipment rack.

6. Insert the main 12-inch Modero unit into an NXA-RK12 (FIG. 43).

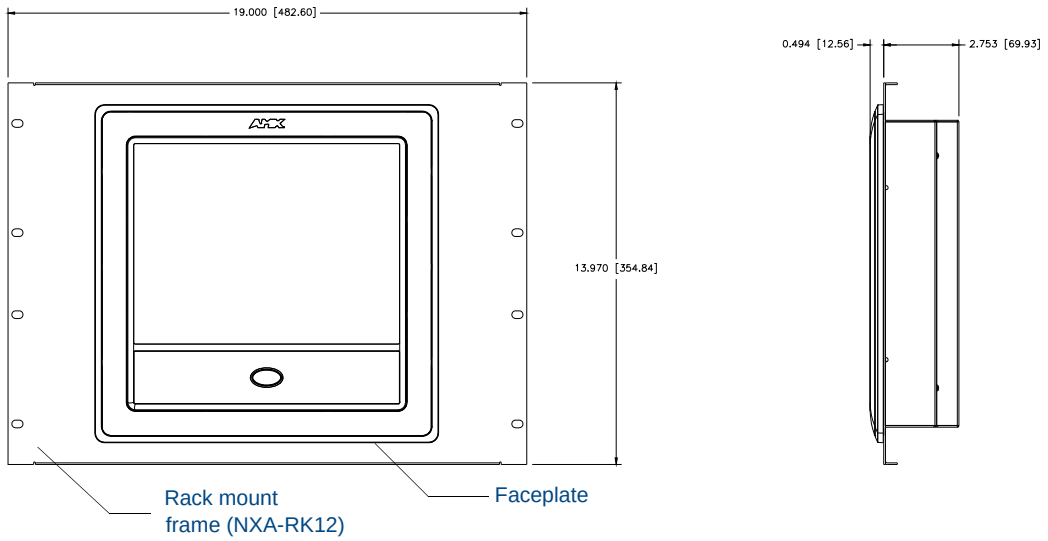


FIG. 43 NXD-1200V 12 inch Wall Mount panel installed into an NXA-RK12 Rack Mount Kit

7. Secure the panel to the NXA-RK frame by first inserting and then tightening the four #4-40 screws (provided). Line up the four mounting holes and use a grounded Phillips-head screwdriver to tighten the screws in a clockwise direction.
8. Insert the NXA-RK (with connected NXD unit) into the equipment rack, making sure to align the screw holes along the sides on the NXA-RK with the holes in the equipment rack.
9. Use a grounded Phillips-head screwdriver to secure the NXA-RK (with connected NXD unit) to the equipment rack using #10-32 screws (not included).
10. Place the magnet faceplate back onto the main NXD unit by gripping the faceplate and placing it on the housing with gentle force. *Make sure to align the Microphone, Light, and PIR Motion sensor locations to their respective openings on the front bezel/faceplate.*

11. Reconnect the terminal RJ-45, Ethernet, and any optional audio/video wiring to their respective locations on either the NXA-AVB/ETHERNET Breakout Box, Ethernet port, or NetLinx Master.
12. Reconnect the terminal power connector on the 12 VDC-compliant power supply and apply power.

Wiring Guidelines for the 1200V Panels

These panels require the use of a 12 VDC-compliant power supply to provide power to the panel via the 2-pin 3.5 mm mini-Phoenix PWR connector. Use the previously referenced power requirements information to determine the power draw.

The incoming PWR and GND wires from the power supply must be connected to the corresponding locations within the PWR connector.

CAUTION

These units should only have one source of incoming power. Using more than one source of power to the touch panel can result in damage to the internal components and a possible burn out.
*Apply power to the panels **only after** installation is complete.*

Preparing captive wires

You will need a wire stripper and flat-blade screwdriver to prepare and connect the captive wires.

WARNING

Never pre-tin wires for compression-type connections.

1. Strip 0.25 inch (6.35 mm) of insulation off all wires.
2. Insert each wire into the appropriate opening on the connector (according to the wiring diagrams and connector types described in this section).
3. Tighten the screws to secure the wire in the connector. *Do not tighten the screws excessively; doing so may strip the threads and damage the connector.*

Wiring a power connection

To use the 2-pin 3.5 mm mini-Phoenix connector with a 12 VDC-compliant power supply, the incoming PWR and GND wires from the external source must be connected to their corresponding locations on the connector (FIG. 44).

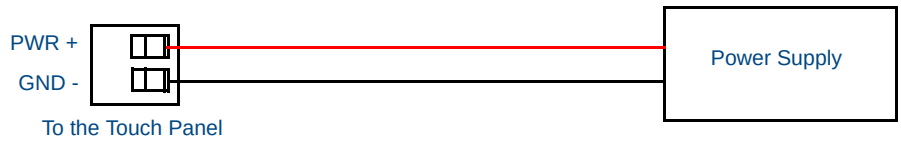


FIG. 44 NetLinx power connector wiring diagram

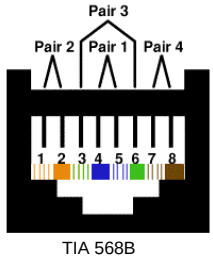
1. Insert the PWR and GND wires on the terminal end of the 2-pin 3.5 mm mini-Phoenix cable. ***Match the wiring locations of the +/- on both the power supply and the terminal connector.***
2. Tighten the clamp to secure the two wires. *Do not tighten the screws excessively; doing so may strip the threads and damage the connector.*
3. Verify the connection of the 2-pin 3.5 mm mini-Phoenix to the power supply.

Audio/Video Port: Connections and Wiring

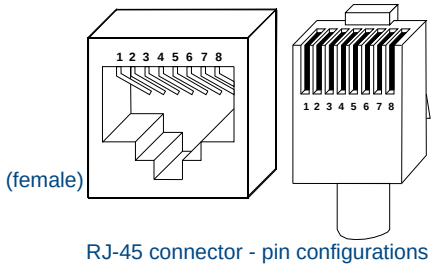
The following table shows the signal and pinout/pairing information used on the RJ-45 Audio and Video connections.

Audio/Video RJ-45 Pinout Information

Pin	Wire Color	Function	Polarity
1	Orange/White	Right Audio In	+
2	Orange	Right Audio In	-
3	Green/White	Video In	-
4	Blue	Mic Out	-
5	White/Blue	Mic Out	+
6	Green	Video In	+
7	White/Brown	Left Audio In	+
8	Brown	Left Audio In	-



TIA 568B



RJ-45 connector - pin configurations

Refer to the *Installing CAT5 Suppression Ferrites* section on page 12 for detailed information on how to install the necessary number of CAT5 Suppression Ferrites on the Black A/V RJ-45 cable connected to the panel.

Ethernet/RJ-45 Port: Connections and Wiring

FIG. 45 describes the blink activity for the Ethernet 10/100 Base-T RJ-45 connector and cable. The Ethernet cable is connected to the side of the Wall Mount panels

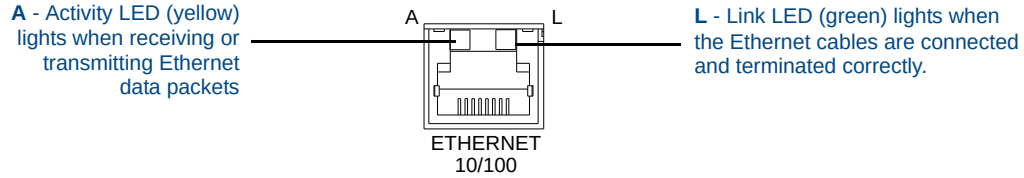

A - Activity LED (yellow) lights when receiving or transmitting Ethernet data packets
A
L
L - Link LED (green) lights when the Ethernet cables are connected and terminated correctly.
ETHERNET
10/100

FIG. 45 Layout of Ethernet LEDs

The following table lists the pinouts, signals, and pairing associated with the Ethernet connector.

Ethernet RJ-45 Pinouts and Signals

Pin	Signals	Connections	Pairing	Color
1	TX +	1 --------- 1	1 --------- 2	Orange-White
2	TX -	2 --------- 2		Orange
3	RX +	3 --------- 3	3 --------- 6	Green-White
4	no connection	4 --------- 4		Blue
5	no connection	5 --------- 5		Blue-White
6	RX -	6 --------- 6		Green
7	no connection	7 --------- 7		Brown-White
8	no connection	8 --------- 8		Brown

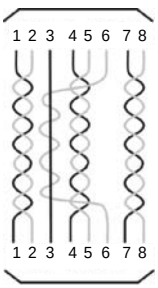


FIG. 46 diagrams the RJ-45 pinouts and signals for the Ethernet RJ-45 connector and cable.

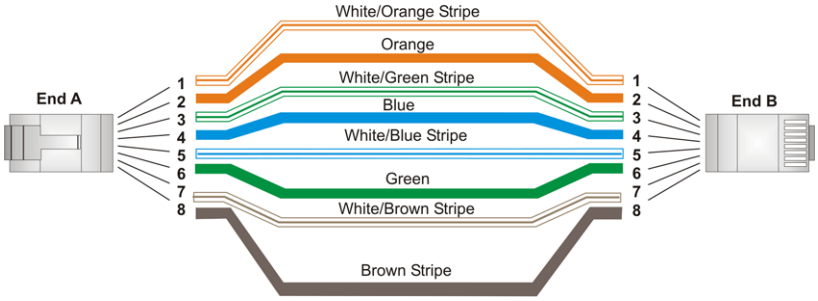


FIG. 46 RJ-45 wiring diagram

Panel Calibration

Overview

This section outlines the steps for calibrating the touch panel. *It is recommended that you calibrate the panel before its initial use and after completing a firmware download.*

Modero panels are factory setup with specific demo touch panel pages. The first splash screen that appears indicates the panel is receiving power, beginning to load firmware, and preparing to display the default touch panel pages. When the panel is ready, the AMX Splash Screen is replaced by the Initial Panel Page (FIG. 47).

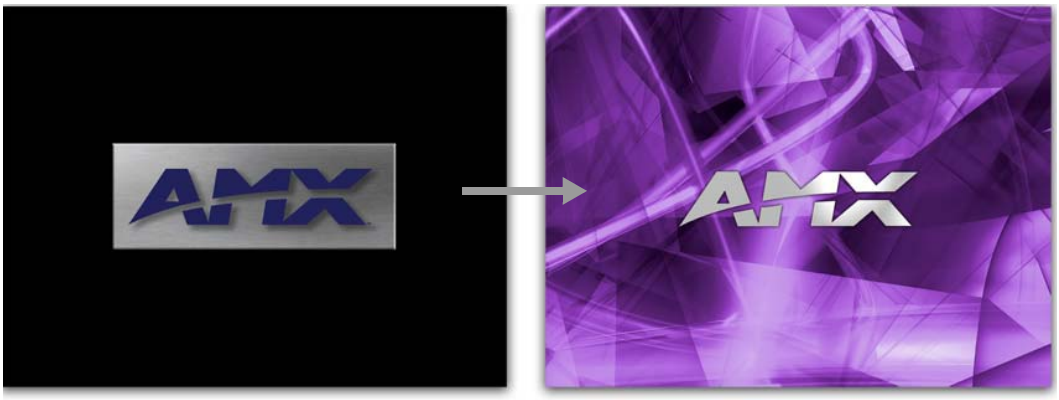


FIG. 47 AMX splash screen and initial Panel Page

Calibrating the Modero Panel

1. Press and hold the grey Front Setup Access button (FIG. 48) for **6 seconds** (passing-over the Setup page) to access the Calibration setup page (FIG. 49). ***The panel should first be calibrated properly.***

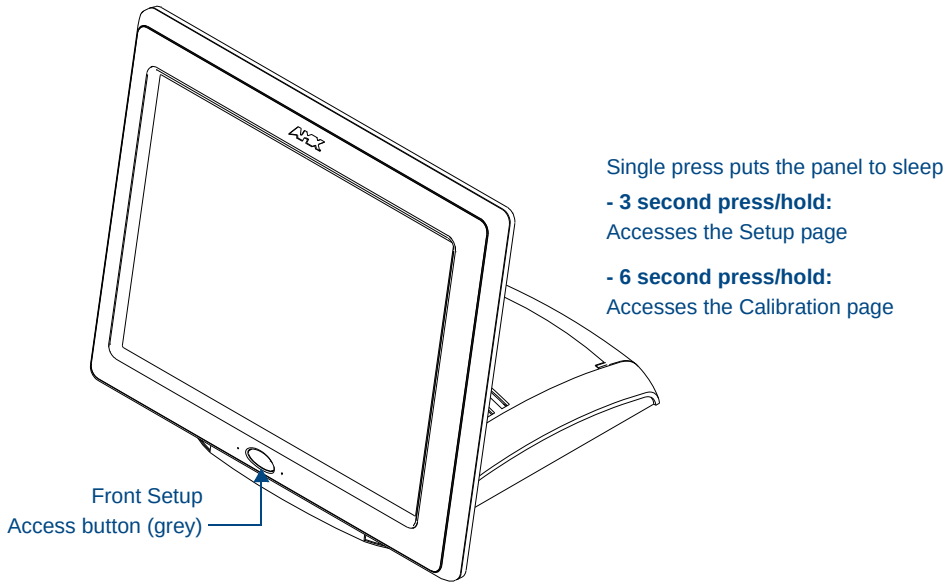

Single press puts the panel to sleep
- 3 second press/hold:
Accesses the Setup page
- 6 second press/hold:
Accesses the Calibration page
Front Setup
Access button (grey)

FIG. 48 Location of grey Front Setup Access button

Press the crosshairs (on the Calibration page) to set the calibration points on the LCD (FIG. 49).

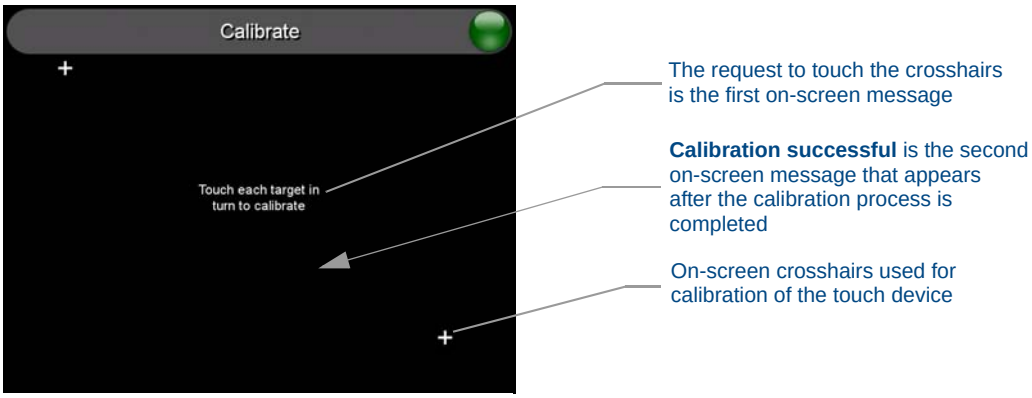

Calibrate
Touch each target in turn to calibrate
The request to touch the crosshairs is the first on-screen message
Calibration successful is the second on-screen message that appears after the calibration process is completed
On-screen crosshairs used for calibration of the touch device

FIG. 49 Touch Panel Calibration Screens

2. After the "***Calibration Successful..***" message appears, press anywhere on the screen to continue and return to the Setup page.

NOTE

If the calibration was improperly set and you cannot return to the Calibration page (through the panel's firmware); *you can access this firmware page via G4 WebControl where you can navigate to the Protected Setup page and press the Calibrate button through your VNC window.*
This action causes the panel to go to the Calibration page seen above, where you can physically recalibrate the actual touch panel again using the above procedures.

Testing your Calibration

1. Press and hold down the on-screen **Calibration** button for 6 seconds to enter the Calibration Test page (FIG. 50).

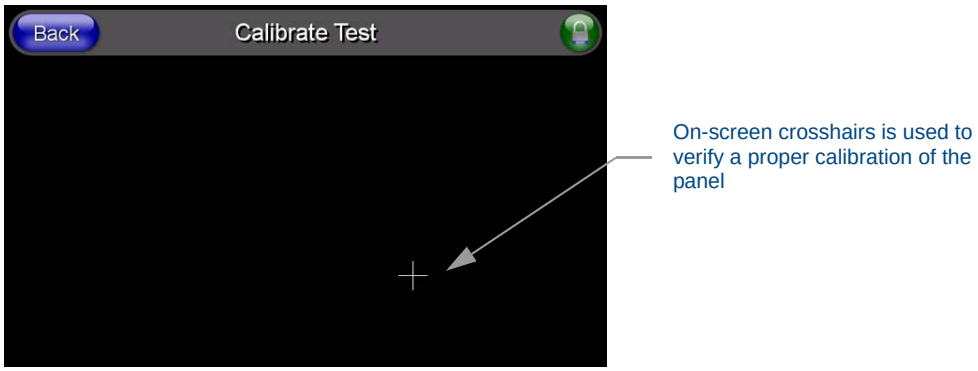


FIG. 50 Calibration Test page

2. Press anywhere on this page to confirm the on-screen crosshairs match your touch points.
3. If the crosshairs do not appear directly below your LCD touch points, press the **Back** button and recalibrate the panel using the above steps.
4. Exit this Calibration Test page by pressing the **Back** button to return to the Protected Setup page.

Configuring Communication

Overview

Communication between the Modero panel and the Master is done using either **USB** or **ETHERNET** (**DHCP or Static IP**). Ethernet communication can be achieved through either a direct connection (Ethernet) or through the use of the optional NXA-PCI80211G wireless interface card.

NOTE

USB input devices must be plugged into the rear or side USB connectors before the G4 panel is powered-up. The panel will not detect a USB connection of this type until after the unit cycles power.

WARNING

Before commencing, verify you are using the latest NetLinx Master and Modero panel firmware. Verify you are using the latest versions of AMX's NetLinx Studio and TPDesign4 programs.

Modero Setup and System Connection

1. Press the grey Front Setup Access button for **3 seconds** to open the Setup page (FIG. 51).

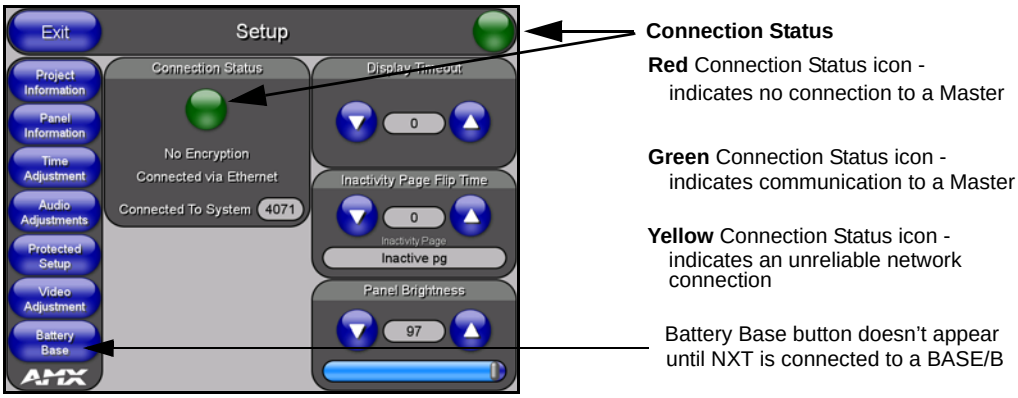


FIG. 51 Setup page

2. Press the **Protected Setup** button (located on the lower-left of the panel page) to open the Protected Setup page and display an on-screen keypad.
3. Enter ***1988*** into the Keypad's password field and press **Done** when finished.

NOTE

Clearing Password #5, from the initial Password Setup page, removes the need for you to enter the default password before accessing the Protected Setup page.

4. Press the red *Device Number* field to open the Device Number keypad (FIG. 52).
5. Enter a **Device Number** value for the panel into the Device Number Keypad.
   The default is 10001 and the range is from 1 - 32000.

NOTE

When using multiple panels within a NetLinx System, remember to assign unique Device Number values to each panel so that all assigned panels appear in the System listing for the target Master.

6. Press **Done** to close the keypad, assign the number, and return to the Protected Setup page.

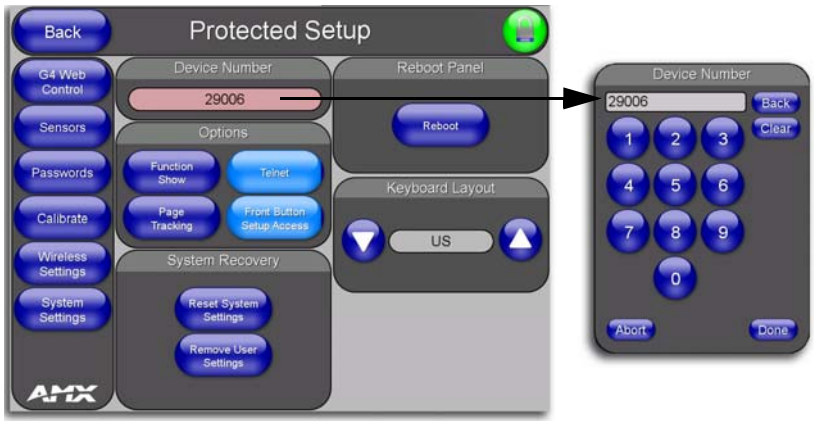


FIG. 52 Protected Setup page

7. Press the on-screen **Reboot** button to restart the panel and incorporate any changes.

NOTE

Before continuing, open NetLinx Studio 2.x. This program assists in developing a System Number, Master IP/URL, and Master Port number. Refer to your NetLinx Master's instruction manuals for more information.

8. Obtain the System Number and Master IP Address from NetLinx Studio. This information must be specific for the system used with the configured Modero panel.
9. Press the grey Front Setup Access button for **3 seconds** to open the Setup page.
10. Press the **Protected Setup** button (located on the lower-left of the panel page) to open the Protected Setup page.
11. Press the **System Settings** button (located on the Protected Setup page) to open the System Settings page (FIG. 53) and begin configuring the communication settings on the panel to match those of the target Master.

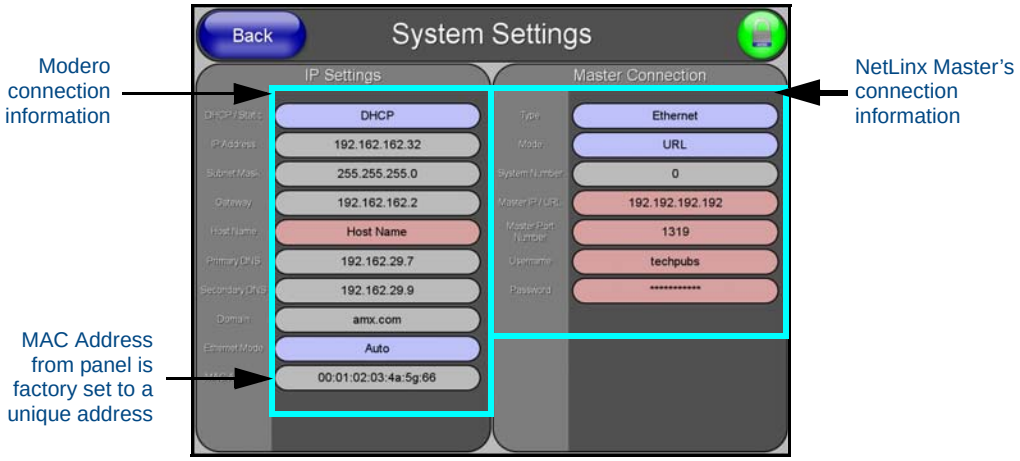


FIG. 53 System Settings page

NOTE

*There are 2 possible Master Connection Types available: **USB** or **Ethernet**.*
*A USB connection type is a **direct connection** from the panel's mini-USB port to a corresponding USB port on the PC (acting as a Virtual Master).*
An Ethernet connection type involves indirect communication from the panel to a Master via an Ethernet connection to the network.

WARNING

It is recommended that firmware KIT files only be transferred over a direct connection and only when the panel is connected to a power supply. If battery power or wireless connection fails during a firmware upgrade, the panel flash file system may become corrupted.

NOTE

*The mini-USB connector **MUST** be plugged into an already active panel before the PC can recognize the connection and assign an appropriate USB driver. This driver is part of the latest TPDesign4 software application installation.*

Configuring and Using USB with a Virtual Master

NetLinx Studio can be setup to run a Virtual Master where the PC acts as the Master by supplying its own IP Address for communication to the panel. The PC is first equipped with the USB driver, the panel is then configured for USB communication, and then Studio is configured to act as the Master.

For a personal computer to establish a connection to a Modero panel via USB, the target computer must have the appropriate AMX USB driver installed. This installation is bundled into the latest TPDesign4 software setup process or can be downloaded independently from the main Application Files page on **www.amx.com**.

Step 1: Setting up the Panel and PC for USB Communication

1. If you do not currently have the latest version of TPDesign4, navigate to **www.amx.com > Tech Center > Downloadable Files > Application Files > NetLinx Design Tools** section of the website and locate the AMX USB Driver executable (**AMX USBLAN Setup exe**).
2. Download this executable file to a known location on your computer.
3. Launch the file by double-clicking on it and follow the on-screen prompts to complete your installation. ***Note that even if you have loaded the latest AMX Studio or TPD4 software, you will still need to download and install this file if you are working with either the 1200V-Series or VG-Series of panels.***
4. Choose the default language, agree to the Licensing information, and choose the location for the file installations (**C:\Program Files\AMX\USBLAN**).
5. From within the Choose Components dialog, select the features you wish to install. The **Driver** option is selected by default and is the only item required.
6. Click the **Install** button to continue with the installation.
7. Once the application begins the installation of the corresponding USB driver files, it may encounter cases where previous versions of these files already exist. This can occur if you have previously installed released versions of NetLinx Studio and TPDesign4.
   - If you are prompted to replace the **AXBLAN.INF** file, select **YES**.
   - If you are prompted to replace the **Checked driver file**, select **NO**.
   - If you are prompted to replace the **AXBLAN.SYS** and **AXFILT.SYS** files, select **Yes**.
8. Continue the setup process by following these OS-related processes:
   - For machines running Windows 2000 simply click the **Next** button when the installation is complete. *Creating a restore point is not an available option in 2000.*
   - For Windows XP machines the setup program asks if you would like to create a restore point. It is always a good idea to create restore points prior to installing new software.
     Click the **Next** button when done.
9. At the end of the installation, press the **Finish** button.

Step 2: Confirming the Installation of the USB Driver on the PC

The first time each AMX touch panel is connected to the PC it is detected as a new hardware device and the USBLAN driver becomes associated with it (**panel specific**). Each time thereafter the panel is "recognized" as a unique USBLAN device and the association to the driver is done in the background. When the panel is detected for the **first time** some user intervention is required during the association between panel and driver.

1. After the installation of the USB driver has been completed, confirm the proper installation of the large Type-A USB connector to the PC's USB port, and restart your machine.

NOTE

If the panel is already powered, continue with steps 3.
The panel MUST be powered and configured for USB communication before connecting the mini-USB connector to the panel's Program Port.

2. Connect the terminal end of the 12 VDC-compliant power supply cable to the power connector on the rear/side of the touch panel and then apply power.
3. After the panel powers-up, press and hold the grey Front Setup Access button (**for 3 seconds**) to continue with the setup process and proceed to the Setup page.
4. Select **Protected Setup > System Settings** (located on the lower-left) to open the System Settings page (FIG. 54).

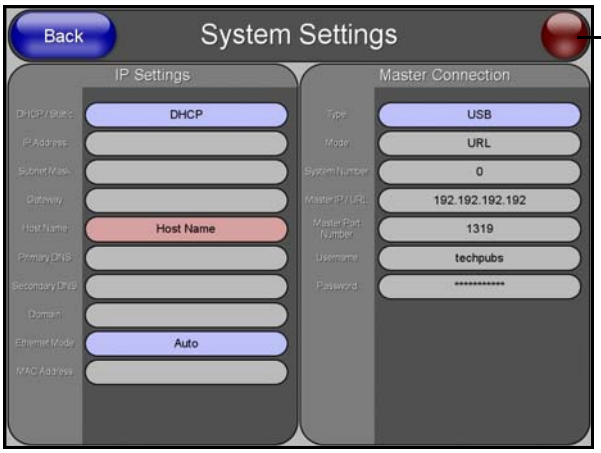


FIG. 54 System Settings page - using a USB Connection Type

5. Toggle the blue *Type* field (***from the Master Connection section***) until the choice cycles to **USB**. Refer to the *System Settings Page* section on page 107 for more information about the fields on this page.

NOTE

***ALL** fields are then greyed-out and read-only, but still display any previous network information.*

6. Press the **Back** button on the touch panel to return to the Protected Setup page.
7. Press the on-screen **Reboot** button to both save any changes and **restart the panel.** *Remember that the panel's connection type must be set to **USB** prior to rebooting the panel and prior to inserting the USB connector.*
8. **ONLY AFTER** the unit displays the first panel page, **THEN** insert the mini-USB connector into the Program Port on the panel. It may take a minute for the panel to detect the new connection and send a signal to the PC (*indicated by a green System Connection icon*). If this is your first time installing the USB driver, a USB driver installation popup window (FIG. 55) then appears on the screen.

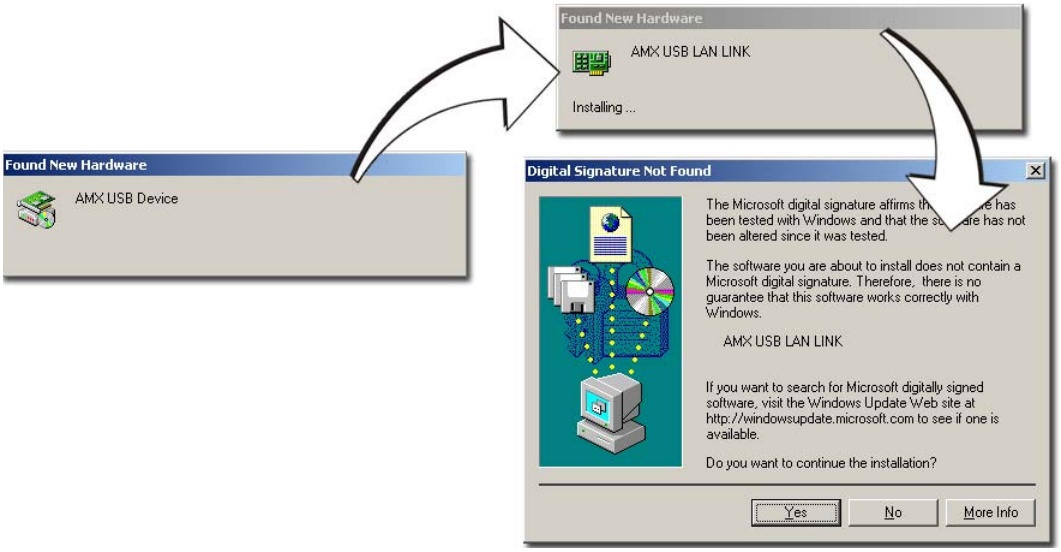

Found New Hardware
AMX USB LAN LINK
Installing ...
Found New Hardware
AMX USB Device
Digital Signature Not Found
The Microsoft digital signature affirms th e has been tested with Windows and that the s are has not been altered since it was tested.
The software you are about to install does not contain a Microsoft digital signature. Therefore, there is no guarantee that this software works correctly with Windows.
AMX USB LAN LINK
If you want to search for Microsoft digitally signed software, visit the Windows Update Web site at http://windowsupdate.microsoft.com to see if one is available.
Do you want to continue the installation?
Yes
No
More Info

FIG. 55 USB driver installation popup window

- This window notifies you that the panel has been detected by the PC as a USB-compliant device and the PC is installing an appropriate USB driver to establish a proper communication to the panel.
- The driver does not contain a Microsoft® digital signature and Windows® then informs you of such.

9. Click **Yes** when told that a digital signature was not found. This action accepts the installation of the new USB driver. **The panel is now configured to communicate directly with the PC.**
   - This process completes the association between driver and device.
     Each time the same touch panel is connected to the computer the driver is automatically loaded (*using a unique name - example USB LAN LINK #1, #2*).
     Each time a different touch panel is connected to the computer, the previous procedures will need to be repeated.
   - The previous version of the AMX USBLAN driver showed a USB connection icon in the system tray when a panel was connected. **The new version of the driver does not show an icon in the System Tray.**

NOTE

A Virtual NetLinx Master (VNM) is used when the target panel is not connected to a physical NetLinx Master. In this situation, the PC takes on the functions of a Master via a Virtual NetLinx Master. ***This connection is made by either using the PC's Ethernet Address (via TCP/IP using a known PC's IP Address as the Master) or using a direct mini-USB connection to communicate directly to the panel****.*

10. Navigate back to the System Settings page.

Step 3: Confirm and View the current AMX USB device connections

1. Navigate to **Start > Settings > Control Panel >** and double-click the **System** icon to launch the System Properties dialog.
2. Select the **Hardware** tab and click on the **Device Manager** button to launch the Device Manager dialog.
   - Within the *Device Manager* dialog, the AMX USBLAN device appears under Network Adapters (FIG. 56) and has a unique name such as AMX USB LAN LINK #2. The number changes depending on which recognized panel is currently connected.

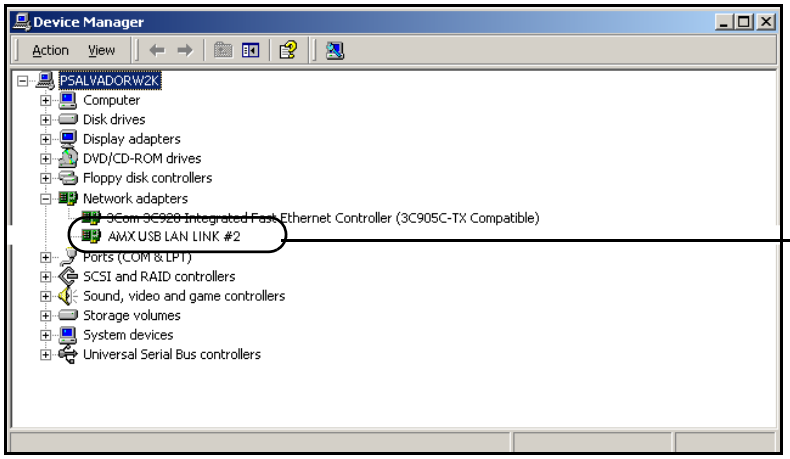


FIG. 56 Device Manager dialog showing USB device

To remove the USB driver association from a previously connected touch panel, you must navigate back to the Device Manager, right-click on the panel's USB driver (example AMX USB LAN LINK #2) and select **Uninstall** from the context menu and then **OK**.

- Once the system completes the removal of the device, the Device Manager window will refresh, and the device will no longer appear.
- The next time this device is connected to the computer it will appear as a new hardware device and will need to be associated again with the driver (refer to *Step 2: Confirming the Installation of the USB Driver on the PC* section on page 49.

Step 4: Using a USB to Configure a Virtual Master (using NetLinx Studio)

NOTE

*When configuring your panel to communicate via USB with a Virtual Master (on your PC), ONLY the **USB** connection option must be selected within the Type field. Since this is a direct connection, the PC's IP Address is not needed.*

Before beginning:

1. Verify the panel has been configured to communicate via USB within the System Settings page and that the USB driver has been properly configured. Refer to the previous section for more information.
2. Launch NetLinx Studio 2.x (default location is **Start > Programs > AMX Control Disc > NetLinx Studio 2 > NetLinx Studio 2**).
3. Select **Settings > Master Communication Settings**, from the Main menu to open the Master Communication Settings dialog (FIG. 57).

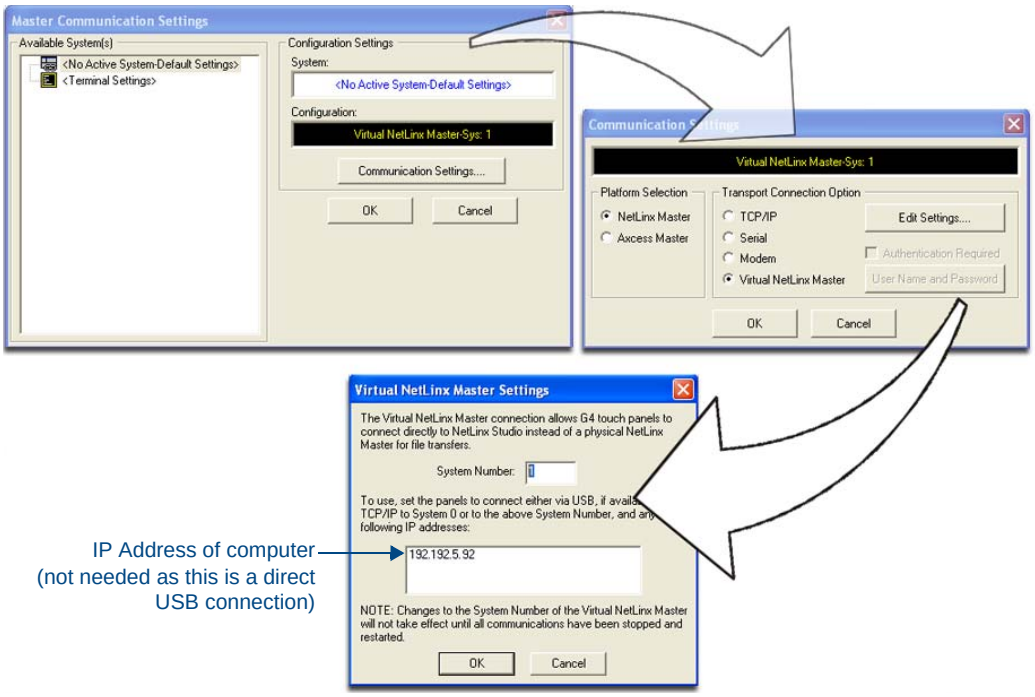

Master Communication Settings
Available System(s)
<No Active System-Default Settings>
<Terminal Settings>
Configuration Settings
System:
<No Active System-Default Settings>
Configuration:
Virtual NetLinx Master-Sys: 1
Communication Settings....
OK
Cancel
Communication Settings
Virtual NetLinx Master-Sys: 1
Platform Selection
NetLinx Master
Axcess Master
Transport Connection Option
TCP/IP
Serial
Modem
Virtual NetLinx Master
Edit Settings....
Authentication Required
User Name and Password
OK
Cancel
Virtual NetLinx Master Settings
The Virtual NetLinx Master connection allows G4 touch panels to connect directly to NetLinx Studio instead of a physical NetLinx Master for file transfers.
System Number:
1
To use, set the panels to connect either via USB, if available, TCP/IP to System 0 or to the above System Number, and any following IP addresses:
192.192.5.92
NOTE: Changes to the System Number of the Virtual NetLinx Master will not take effect until all communications have been stopped and restarted.
OK
Cancel
IP Address of computer
(not needed as this is a direct
USB connection)

FIG. 57 Assigning Communication Settings for a Virtual Master

4. Click the **Communications Settings** button to open the Communications Settings dialog.
5. Click on the **NetLinx Master** radio button (*from the Platform Selection section*) to indicate that you are working as a NetLinx Master.
6. Click on the **Virtual Master** radio box (*from the Transport Connection Option section*) to indicate you are wanting to configure the PC to communicate directly with a panel. Everything else such as the Authentication is greyed-out because you are not going through the Master's UI.
7. Click the **Edit Settings** button (*on the Communications Settings dialog*) to open the Virtual NetLinx Master Settings dialog (FIG. 57).
8. From within this dialog enter the System number (default is **1**).
9. Click **OK** three times to close the open dialogs, save your settings, and return to the main NetLinx Studio application.
10. Click the **OnLine Tree** tab in the Workspace window to view the devices on the Virtual System. *The default System value is one*.
11. Right-click on the *Empty Device Tree/System* entry and select **Refresh System** to re-populate the list. ***The panel will not appear as a device below the virtual system number (in the Online Tree tab) until both the system number used in step 7 for the VNM is entered into the Master Connection section of the System Settings page and the panel is restarted.***
    - The Connection status turns green after a few seconds to indicate an active USB connection to the PC (Virtual Master). No Lock icon is displayed because this USB connection is not secured (*requiring a username/password*).
    - If a few minutes have gone by and the System Settings icon still does not turn green, repeat the USB connection and Virtual Master setup procedures (outlined in this section). Refreshing the System sends out a request to the panel to respond and completes the communication (*turning the System Connection icon green*).

Step 5: Confirm and View the current AMX USB device connections

Use the CC-USB Type-A to Mini-B 5-wire programming cable (**FG10-5965**) to provide communication between the mini-USB Program port on the touch panel and the PC. This method of communication is used to transfer firmware KIT files and TPD4 touch panel files.

NOTE

A mini-USB connection is only detected after it is installed onto an active panel. Connection to a previously powered panel which then reboots, allows the PC to detect the panel and assign an appropriate USB driver.

1. Verify this direct USB connection (Type-A on the panel to mini-USB on the panel) is configured properly using the steps outlined in the previous two sections.
2. With the panel already configured for USB communication and the Virtual Master setup within NetLinx Studio, its now time to verify the panel is ready to receive files.
3. Click the **OnLine Tree** tab in the Workspace window to view the devices on the Virtual System. *The default System value is one*.
4. Right-click on the System entry (**A** in FIG. 58) and select **Refresh System**. This causes a refresh of all project systems, establishes a new connection to the Virtual Master, and populates the System list with devices on your particular system.

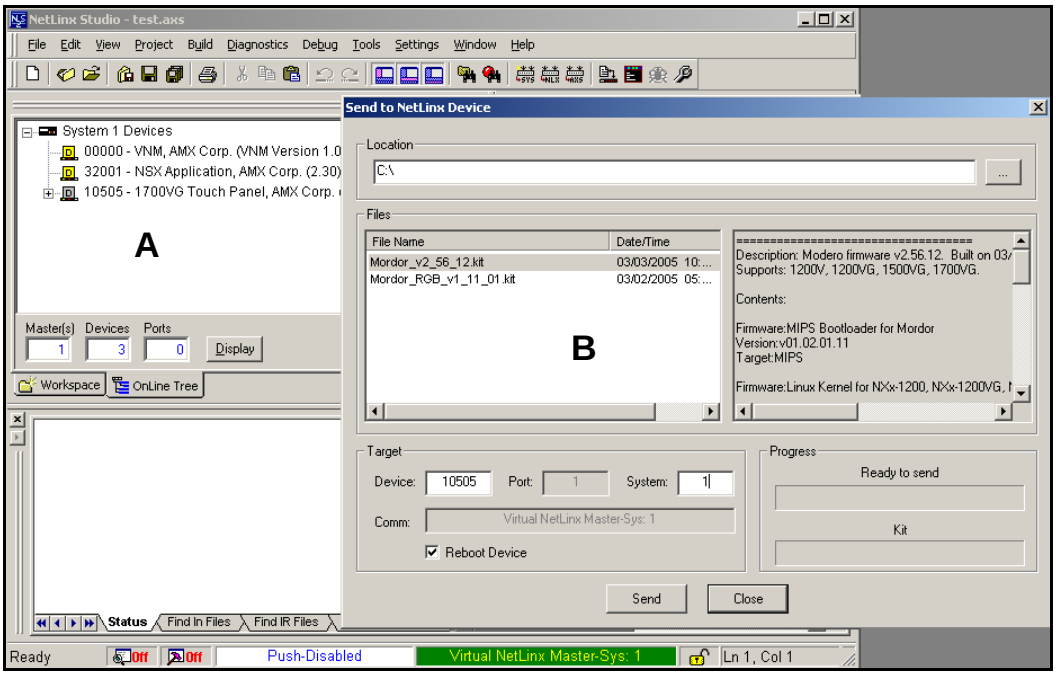


FIG. 58 Using USB for Virtual Master communication

Wireless Settings Page - Wireless Access Overview

IP Routing

The behavior of the wireless routing is largely dependent on the wired network interface. Although the panel can be connected to two networks simultaneously it may only have one gateway. If the wired network was successfully set up and a gateway was obtained; then the default route for all network traffic will be via the wired network. In the event that the wired network was not configured, then the default route for all network traffic will be via the wireless network. The wired network connection always takes priority.

As an example: Imagine a panel connected to two networks A & B. **A** is the wired network and **B** is the wireless network. If the Master controller is on either of these networks then it will be reached. However if the Master controller is on a different network, **C**, then determining which network interface (wired or wireless) that will be used is dependent on the gateway.

Hot Swapping

Hot swapping is not an issue on these panels as the card is installed within the unit and cannot be removed without first removing the housing.

In the case of DHCP, there must be a DHCP server accessible before the fields are populated.

NOTE

If the SSID (Network Name) and WEP fields have not previously been configured, the Wireless Settings page will not work until the panel is rebooted.

Ethernet Communication from the panel can be direct (using an Ethernet cable) or indirect (through the NXA-PCI80211G AMX Wireless Card (**FG2255-04**) communicating to a Wireless Access Point (WAP) such as the NXA-WAP200G). In determining the Ethernet method of communication, the panel will always default first to the direct Ethernet communication. If no direct connection is detected, the panel will first check to see if there is an installed wireless interface card and then communicate to the WAP using the Wireless Settings assigned within the Wireless Settings page. The WAP communication parameters must match those of the pre-installed wireless interface card installed within the panel.

- **Wireless Access Points** are the cornerstone of any wireless network. A Wireless Access Point acts as a bridge between a wired and wireless network. It aggregates the traffic from all the wireless clients and forwards it down the network to the switch or router. One Wireless Access Point may be all you need. However, you could need more Wireless Access Points depending on either how large your installation is, how it is laid out, and how it is constructed.
- **Wireless Equivalent Privacy** (**WEP**) Security is a method by which WLANs protect wireless data streams. A data stream encrypted with WEP can still be intercepted or eavesdropped upon, but the encryption makes the data unintelligible to the interloper. The strength of WEP is measured by the length of the key used to encrypt the data. The longer the key, the harder it is to crack. 802.11b implementations provided 40-bit and 104-bit WEP keys. This is known respectively as 64-bit and 128-bit WEP encryption. 64-bit is generally not regarded as adequate security protection. Both key lengths are supported by the Modero product line. Whichever level of WEP you use, it's crucial to use identical settings (CASE SENSITIVE)--the key length, and the key itself-- on all devices. Only devices with common WEP settings will be able to communicate. Similarly, if one device has WEP enabled and another doesn't, they won't be able to talk to each other.

  Although the calculations required to encrypt data with WEP can impact the performance of your wireless network, it's generally seen only when running benchmarks, and not large enough to be noticeable in the course of normal network usage.

Configuring a Wireless Connection

When working with a wireless card, the first step is to configure wireless communication parameters within the Wireless Settings page. This page only configures the card to communicate to a target WAP (such as the NXA-WAP200G), **it is still necessary to tell the panel which Master it should be communicating with**. This "pointing to a Master" is done via the System Settings page where you configure the IP Address, System Number and Username/Password information assigned to the target Master.

Step 1: Configuring the Panel's Wireless IP Settings

The first step to successfully setting up your wireless card is to configure the IP Settings section of the Wireless Settings page. The section configures the communication parameters from the Modero panel to the web.

Wireless communication using a DHCP Address

1. Press the **Protected Setup** button (located on the lower-left of the panel page) to open the Protected Setup page and display an on-screen keypad.
2. Enter ***1988*** into the Keypad's password field and press **Done** when finished.
3. Press the **Wireless Settings** button (located on the lower-left) to open the Wireless Settings page. Wireless communication is set within the IP Settings section of this page (FIG. 59).
4. Toggle the *DHCP/Static* field (***from the IP Settings section***) until the choice cycles to **DHCP**. *This action causes all fields in the IP Settings section (other than Host Name) to be greyed-out.*

NOTE

DHCP will register the unique MAC Address (factory assigned) on the panel and once the communication setup process is complete, assign IP Address, Subnet Mask, and Gateway values from the DHCP Server.

5. Press the optional *Host Name* field to open a Keyboard and enter the Host Name information.

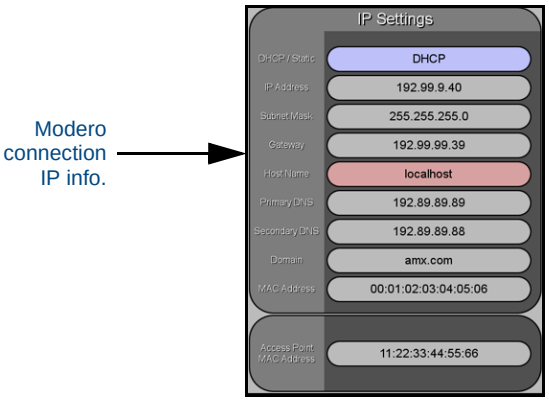


FIG. 59 Wireless Settings page (IP Settings section)

6. Press **Done** after you are finished assigning the alpha-numeric string of the host name.
7. Do not alter any of these remaining greyed-out fields in the IP Settings section. Once the panel is rebooted, these values are obtained by the unit and displayed in the *DNS* fields after power-up.

NOTE

This information can be found in either the Workspace - System name > Define Device section of your code (that defines the properties for your panel), or in the Device Addressing/Network Addresses section of the Tools > NetLinx Diagnostics dialog.

8. Setup the security and communication parameters between the wireless card and the target WAP by configuring the Wireless Settings section on this page. Refer to *Step 2: Configuring the Card's Wireless Security Settings* section on page 57 for detailed procedures to setup either a secure or insecure connection.

Wireless communication using a Static IP Address

1. Press the **Protected Setup** button (located on the lower-left of the panel page) to open the Protected Setup page and display an on-screen keypad.
2. Enter ***1988*** into the Keypad's password field and press **Done** when finished.
3. Press the **Wireless Settings** button (located on the lower-left) to open the Wireless Settings page. Wireless communication is set within the IP Settings section of this page (FIG. 59).

NOTE

Check with your System Administrator for a pre-reserved Static IP Address assigned to the panel. This address must be obtained before Static assignment of the panel continues.

4. Toggle the *DHCP/Static* field (***from the IP Settings section***) until the choice cycles to **Static**. *The IP Address, Subnet Mask, and Gateway fields then become user-editable (red).*
5. Press the *IP Address* field to open a Keyboard and enter the Static IP Address (*provided by your System Administrator*).
6. Press **Done** after you are finished entering the IP information.
7. Repeat the same process for the *Subnet Mask* and *Gateway* fields.
8. Press the optional *Host Name* field to open the Keyboard and enter the Host Name information.
9. Press **Done** after you are finished assigning the alpha-numeric string of the host name.
10. Press the Primary DNS field to open a Keyboard, enter the Primary DNS Address (provided by your System Administrator) and press **Done** when compete. Repeat this process for the Secondary DNS field.
11. Press the Domain field to open a Keyboard, enter the resolvable domain Address (this is provided by your System Administrator and equates to a unique Internet name for the panel), and press **Done** when complete.

12. Setup the security and communication parameters between the wireless card and the target WAP by configuring the Wireless Settings section on this page. Refer to the following section for detailed procedures to setup either a secure or insecure connection.

Step 2: Configuring the Card's Wireless Security Settings

The second step to successfully setting up your wireless card is to configure the Wireless Settings section of the Wireless Settings page. The section configures both the communication and security parameters from the internal wireless card to the WAP. ***The procedures outlined within the following sections use an NXA-WAP200G and the target WAP.***

NOTE

Once you have completed setting up the wireless card parameters, you must then navigate to the System Settings page and configure the communication parameters for the target Master. Until those parameters are configured, your Connection Status icon will remain red (indicating that there is no current connection to a Master).

Configuring the Modero's wireless card for unsecured access to a WAP200G

1. Power-down the Modero unit and follow the wireless card installation procedures outlined in *Step 2: Install the 802.11g mini-PCI Wireless Card* section on page 16.
2. Power-up the panel (this allows it to detect the card).
3. Press the **Protected Setup** button (located on the lower-left of the panel page) to open the Protected Setup page and display an on-screen keypad.
4. Enter ***1988*** into the Keypad's password field and press **Done** when finished.
5. Press the **Wireless Settings** button (located on the lower-left) to open the Wireless Settings page.
6. From within the Wireless Settings section of the Wireless Settings page, touch the *Network Name (SSID)* field (FIG. 60).

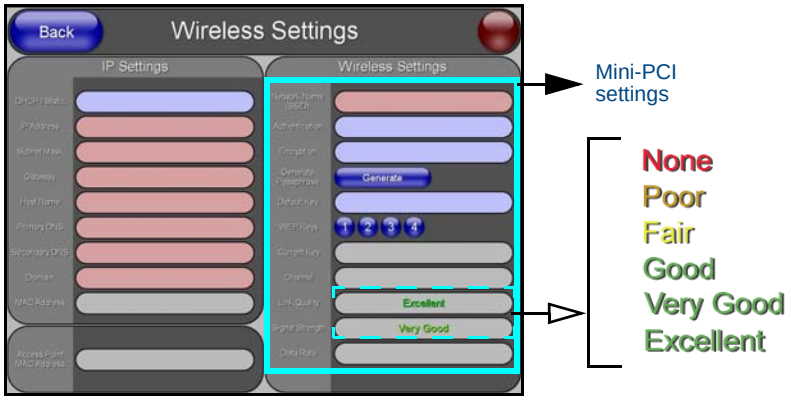


FIG. 60 Wireless Settings page (showing default values)

7. From the *Service Set Identifier* keyboard, enter the SSID name used by your target Wireless Access Point (**case sensitive**).
   - The card should be given the SSID used by the target WAP. If this field is left blank, the unit will attempt to connect to the first available WAP. By default, all WAP200Gs use AMX as their assigned SSID value.
   - One of the most common problems associated with connection to a WAP arise because the SSID was not entered properly. You must maintain the same case when entering the SSID information. ABC is not the same as Abc.
8. Toggle the *Authentication* field to an **Open System (default)**.
   - **Open System Authentication** allows any device to join the network if the panel's SSID matches the WAP's SSID.
9. Toggle the *Encryption* field until it reads **Clear Text (default)**.

The remaining Wireless Settings fields are then greyed-out and become read-only. All NXA-WAP200Gs are factory-shipped as an unsecured WAP with no WEP encryption. The WAP200G initial Status page will display the status of both the WEP and WPA (both disabled).

10. Verify the fields in the *IP Settings* section have been properly configured. Refer to *Step 1: Configuring the Panel's Wireless IP Settings* section on page 55 for detailed information.
11. Press the **Back** button to navigate to the Protected Setup page and press the on-screen **Reboot** button to both save any changes and restart the panel. ***Remember that you will need to navigate to the System Settings page and configure the connection to a target Master.***
12. After the panel restarts, return to the Wireless Settings page to verify the Link Quality and Signal Strength:
    - The bargraphs have been replaced with descriptions: **None**, **Poor**, **Fair**, **Good**, **Very Good**, and **Excellent** (FIG. 60).

The signal strength field should provide some descriptive text regarding the strength of the connection to a Wireless Access Point. If there is no signal or no IP Address displayed; configuration of your network could be required.

Refer to the NXA-WAP200G Instruction Manual for more detailed setup and configuration procedures.

Configuring the Modero's wireless card for secured access to a WAP200G

After logging into the WAP200G, the default Status page appears within the web browser. These read-only values are "pulled" from some of the other user-configurable Configuration Utility pages. By default, wireless Modero panels are configured for unsecured communication to a Wireless Access Point. To properly setup both the WAP200G and panel for secure communication, you must first prepare the Modero panel and then use the information provided to fill out the fields within the WAP's browser-based Basic Wireless Configuration page.

Since the code key generator on Modero panels use the same key generation formula, all panels will generate identical keys for the same Passphrase. The generators used on WAPs will not produce the same key as the Modero generator even if you use the same Passphrase. **This is why we recommend creating the Current Key FIRST on the Modero and then entering that information into the appropriate WAP200G fields**.

1. Power-down the Modero unit and follow the wireless card installation procedures outlined in *Step 2: Install the 802.11g mini-PCI Wireless Card* section on page 16.
    - When configuring touch panels for wireless communication, verify that **no Ethernet connector is installed** within the panel before the unit is power cycled.
2. Power-up the panel (this allows it to detect the card).
3. Press the **Protected Setup** button (located on the lower-left of the panel page) to open the Protected Setup page and display an on-screen keypad.
4. Enter ***1988*** into the Keypad's password field and press **Done** when finished.
5. Press the **Wireless Settings** button (located on the lower-left) to open the Wireless Settings page.
6. Locate the Wireless Settings section of the Wireless Settings page (FIG. 61).

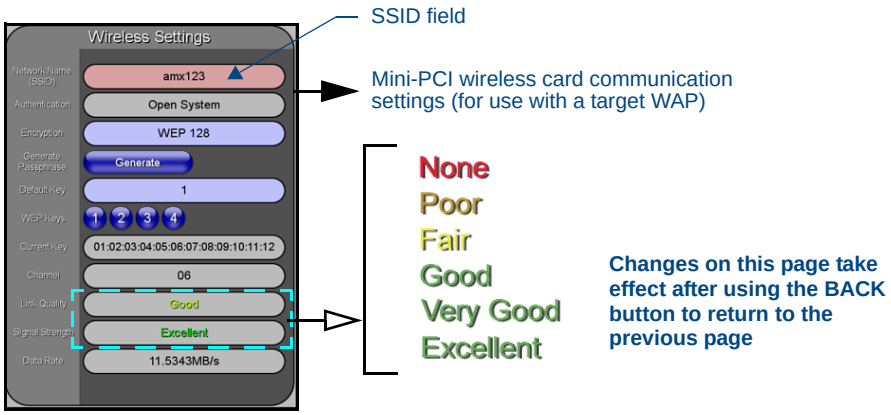


FIG. 61 Wireless Settings page (Wireless Settings section)

NOTE

You must first take the SSID name, Current Key string value, and panel MAC Address information and then later enter it into the appropriate WAP dialog fields in order to "sync-up" the secure connection. These values must be identically reproduced on the target WAP.

7. Touch the *Network Name (SSID)* field and from the *Service Set Identifier* keyboard, enter the SSID name you will be using on your target Wireless Access Point (**case sensitive**).
   - The card should be given the SSID used by the target WAP. If this field is left blank, the unit will attempt to connect to the first available WAP. By default, all WAP200Gs use AMX as their assigned SSID value.
   - One of the most common problems associated with connection to a WAP arise because the SSID was not entered properly. You must maintain the same case when entering the SSID information. ABC is not the same as Abc.
   - The alpha-numeric string is by default **AMX** but can later be changed to any 32-character entry. *This string must be duplicated within the Network Name (SSID) field on the WAP.*
   - As an example, if you use TECHPUBS as your SSID, you must **match this word and the case** within both the *Network Name (SSID)* field on the touch panel's *Network Name SSID* field and on the WAP's *Basic Wireless Configuration* page.
8. Leave the *Authentication* field reading **Open System (default)**.
   - **Open System Authentication** allows any device to join the network if the panel's SSID matches the WAP's SSID. ***An Open System is recommended for communication between Modero panels and an NXA-WAP200G.***
   - **Shared Key Authentication** requires that the panel and the Wireless Access Point have the same WEP Key to authenticate.
9. Toggle the *Encryption* field (FIG. 61) until it reads **WEP64** or **WEP128**. *The 64/128 selection reflects the bit-level of encryption security. This WEP encryption level must match the encryption level being used on the WAP.*

NOTE

WEP will not work unless the same Default Key is set on both the panel and the Wireless Access Point.
For example: if you have your Wireless Access Point set to default key 4 (which was 01:02:03:04:05), you must set the panel's key 4 to 01:02:03:04:05.

10. Toggle the *Default Key* field until the you've chosen a WEP Key value (**from 1- 4**) that matches what you'll be using on your target WAP200G.
    - **These WEP Key identifier values must match for both devices.**
11. With the proper WEP Key value displayed, press the **Generate** button to launch the WEP Passphrase keyboard.
    If you are wanting to have your target WAP (other than a 200G) generate the Current Key - Do not press the Generate button and continue with Step 14.

- This keyboard allows you to enter a Passphrase (such as *AMXPanel*) and then AUTOMATICALLY generate a WEP key which is compatible only among Modero panels.

NOTE

The code key generator on Modero panels use the same key generation formula. Therefore, this same Passphrase generates identical keys when done on any Modero because they all use the same Modero-specific generator. The Passphrase generator is case sensitive.

12. Within this on-screen WEP Passphrase keyboard (FIG. 62), enter a character string or word (such as ***AMXPanel***) and press **Done** when you have finished.

FIG. 62 WEP Passphrase Keyboard

- As an example, enter the word **AMXPanel** using a 128-bit hex digit encryption. After pressing **Done**, the on-screen Current Key field displays a long string of characters (separated by colons) which represents the encryption key equivalent to the word AMXPanel.
- **This series of hex digits (26 hex digits for a 128-bit encryption key) should be entered as the *Current Key* into both the WAP and onto other communicating Modero panels by using the WEP Key dialog (FIG. 63).**

FIG. 63 WEP Key # Keyboard

13. Write down this Current Key string value for later entry into your WAP's *WEP Key* field (***typically entered without colons***) and into the communicating panel's *Current Key* field (FIG. 61).

14. **If you are entering a Current Key generated either by your target WAP or another Modero panel**, within the *WEP Keys* section, touch the **Key #** button to launch the *WEP Key #* keyboard (FIG. 63), enter the characters and press **Done** when finished.

- This Key value corresponds to the Default WEP Key number used on the Wireless Access Point and selected in the Default Key field described in the previous step.

NOTE

If your target Wireless Access Point does not support passphrase key generation and has previously been setup with a manually entered WEP KEY, you must manually enter that same WEP key on your panel.

15. Verify the fields within the IP Settings section have been properly configured. Refer to *Step 1: Configuring the Panel's Wireless IP Settings* section on page 55 for detailed information.
16. Press the **Back** button to navigate to the Protected Setup page and press the on-screen **Reboot** button to both save any changes and restart the panel. ***Remember that you will need to navigate to the System Settings page and configure the connection to a target Master.***
17. After the panel restarts, return to the Wireless Settings page to verify the Link Quality and Signal Strength:

    The bargraphs have been replaced with descriptions: **None**, **Poor**, **Fair**, **Good**, **Very Good**, and **Excellent**.

The signal strength field provides some descriptive text regarding the strength of the connection to a Wireless Access Point. If there is no signal or no IP Address displayed; configuration of your network could be required.

Refer to the NXA-WAP200G Instruction Manual for more detailed setup and configuration procedures.

Configuring multiple wireless Moderos to communicate to a target WAP200G

1. For each communicating touch panel, complete all of the steps outlined within the previous *Configuring the Modero's wireless card for secured access to a WAP200G* section on page 58.
   - Those procedures walk you through assigning an SSID, selecting a WEP encryption level, and obtaining a Current Key string value for a specific WEP Key on a target panel.
2. Navigate back to the Wireless/Wireless Settings page on each panel.
3. Verify that all communicating Modero panels are using the same **SSID**, **encryption level**, **Default Key #**, and an identical **Current Key value**.
   - As an example, all panels should be set to Default Key **#1** and be using **aa:bb:cc**.as the Current Key string value. This same Key value and Current Key string should be used on the target WAP.
4. Repeat steps 1 - 3 on each panel. **Using the same passphrase, generates the same key for all communicating Modero panels.**

Configuring a Wired Ethernet Connection

It is necessary to tell the panel which Master it should be communicating with. This "pointing to a Master" is done via the System Settings page where you configure the IP Address, System Number and Username/Password information assigned to the target Master. If you have previously established a wireless connection to the Internet you must still navigate to the System Settings page and configure the communication parameters for the target Master. Until those parameters are configured, your Connection Status icon will remain red (*indicating there is no current connection to a Master*).

If you have previously configured an internal wireless card for communication to the Internet, you do not need to configure the panel's IP Settings fields and can skip the following Step 1.

Step 1: Configuring the Panel's Wired IP Settings

There are only two available methods of communicating to a target Master over the Internet: Wireless (via an internal card) or Wired (direct Ethernet connection). If you are not using an internal wireless card, you can only configure the connection parameters through the System Settings page. This type of communication can be established either via either a Dynamic IP Address (*DHCP*) or via a pre-reserved Static IP Address (*typically provided by your System Administrator*).

IP Settings section - Configuring a DHCP Address over Ethernet

1. Select **Protected Setup > System Settings** (located on the lower-left) to open the System Settings page.
2. Locate the IP Settings section of this page.

WARNING

Even though the Host, Gateway, Primary DNS, Secondary DNS, and Domain fields appear on the two separate System Settings and Wireless Settings pages; ***the information populating these fields is identical.***
If the information within one of these fields is altered, the change is reflected on both pages within the altered field.
Example*: Domain is altered on Wireless Settings page, the value is then also changed within the Domain field of the System Settings page.*

3. Toggle the *DHCP/Static* field (***from the IP Settings section***) until the choice cycles to **DHCP**.

NOTE

DHCP will register the unique MAC Address (factory assigned) on the panel and once the communication setup process is complete, reserve an IP Address, Subnet Mask, and Gateway values from the DHCP Server.

4. Press the optional *Host Name* field to open a Keyboard and enter the Host Name information.
5. Press **Done** after you are finished assigning the alpha-numeric string of the host name.
6. Do not alter any of the remaining greyed-out fields in the IP Settings section. *Once the panel is rebooted, these values are obtained by the unit and displayed in the DNS fields after power-up*.

NOTE

This information can be found in either the: Workspace- System name > Define Device section of your code (that defines the properties for your panel), or in the Device Addressing/Network Addresses in the Tools > NetLinx Diagnostics dialog.

7. Press the **Back** button to return to the Protected Setup page.
8. Press the on-screen **Reboot** button to both save any changes and restart the panel.

IP Settings section - Configuring a Static IP Address over Ethernet

1. Select **Protected Setup** > **System Settings** (located on the lower-left) to open the System Settings page.
2. Locate the IP Settings section of this page.

NOTE

Check with your System Administrator for a pre-reserved Static IP Address assigned to the panel. This address must be obtained before Static assignment of the panel continues.

3. Toggle the *DHCP/Static* field (***from the IP Settings section***) until the choice cycles to **Static**.
4. Press the *IP Address* field to open a Keyboard and enter the Static IP Address (*provided by your System Administrator*).
5. Press **Done** after you are finished entering the IP information.
6. Repeat the same process for the *Subnet Mask* and *Gateway* fields.
7. Press the optional *Host Name* field to open the Keyboard and enter the Host Name information.
8. Press **Done** after you are finished assigning the alpha-numeric string of the host name.
9. Press the *Primary DNS* field to open a Keyboard, enter the Primary DNS Address (provided by your System Administrator) and press **Done** when compete. Repeat this process for the *Secondary DNS* field.
10. Press the *Domain* field to open a Keyboard, enter the resolvable domain Address (*this is provided by your System Administrator and equates to a unique Internet name for the panel*), and press **Done** when complete.
11. Navigate to the Master Connection section of this page to begin configuring the communication parameters for the target Master.

Step 2: Choosing a Master Connection Mode Setting

There are three Ethernet MODE settings used in the Master Connection section of the System Settings page. **URL is the most common method.**

- **Master Connection MODE** options:
  - **URL** (**Uniform Resource Locator**) is the address that defines the route to a file on the Web or any other Internet facility. In this system, the panel acts as a "Client" and the Master acts as a Server (in that Clients attach to it).
  - **LISTEN** sets the Modero panel to "listen" for broadcasts from the Master (using the panel IP from its URL list). In this system, the panel acts as a "Server" (in that Clients attach to it) and the Master acts as a "Client".
  - **AUTO** is used to instruct the Modero to search for a Master that uses the same System Number (assigned within the Master Connection section) and resides on the same Subnet as itself. In this case, the Master has its UDP feature enabled.
    This **UDP** (**User Datagram Protocol**) is a protocol within the TCP/IP protocol suite that is used in place of TCP when a reliable delivery is not required.
    This UDP enabling is done through a Telnet session on the Master. Refer to the particular NetLinx Master manual for more detailed information.

Step 3: Configuring the Ethernet Connection Type

When using Ethernet as your communication method, the NetLinx Master must first be setup with either a Static IP or DHCP Address obtained from either NetLinx Studio or your System Administrator.

Before beginning:

1. Verify the panel has been configured to communicate either through an Ethernet cable (connected from either the panel to a valid Ethernet Hub) or to a wirelessly to the Wireless Access Point (WAP).

Before commencing, verify you are using the latest NetLinx Master firmware.

2. Verify that the NetLinx Master is receiving power and is communicating via an Ethernet connection with the PC running NetLinx Studio.
3. Connect the terminal end of the 12 VDC-compliant power supply cable to the power connector on the rear/side of the touch panel.
4. Verify the green Ethernet LED (from the rear Ethernet port on the Master) is illuminated (indicating a proper connection).
5. Verify the yellow LED (from the rear Ethernet port on the Master) is blinking (indicating communication).
6. After the panel powers-up, press and hold the grey Front Setup Access button (**for 3 seconds**) to proceed to the Setup page.
7. Select **Protected Setup > System Settings** (located on the lower-left) to open the System Settings page (FIG. 64).

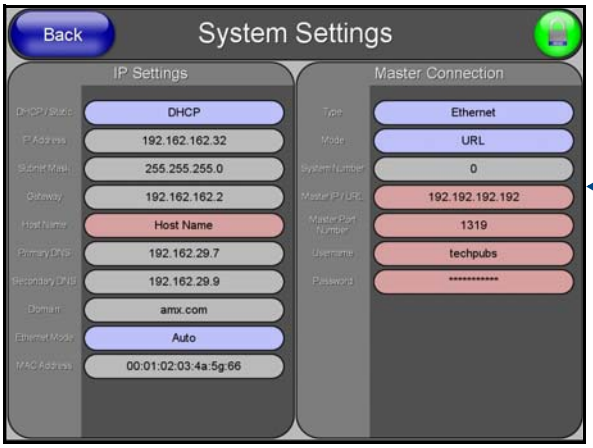


FIG. 64 System Settings page

Master Connection - Virtual Master communication over Ethernet

When configuring your panel to communicate with a Virtual Master (on your PC) via Ethernet, the Master IP/URL field must be configured to match the IP Address of the PC and make sure to use the Virtual System value assigned to the Virtual Master within NetLinx Studio.

Before beginning:

1. Verify the panel has been configured to communicate either through an Ethernet cable (connected from either the panel to a valid Ethernet Hub) or wireless to the Wireless Access Point.
2. Launch NetLinx Studio 2.x (default location is **Start > Programs > AMX Control Disc > NetLinx Studio 2 > NetLinx Studio 2**).
3. Select **Settings > Master Communication Settings**, from the Main menu to open the Master Communication Settings dialog (FIG. 65).

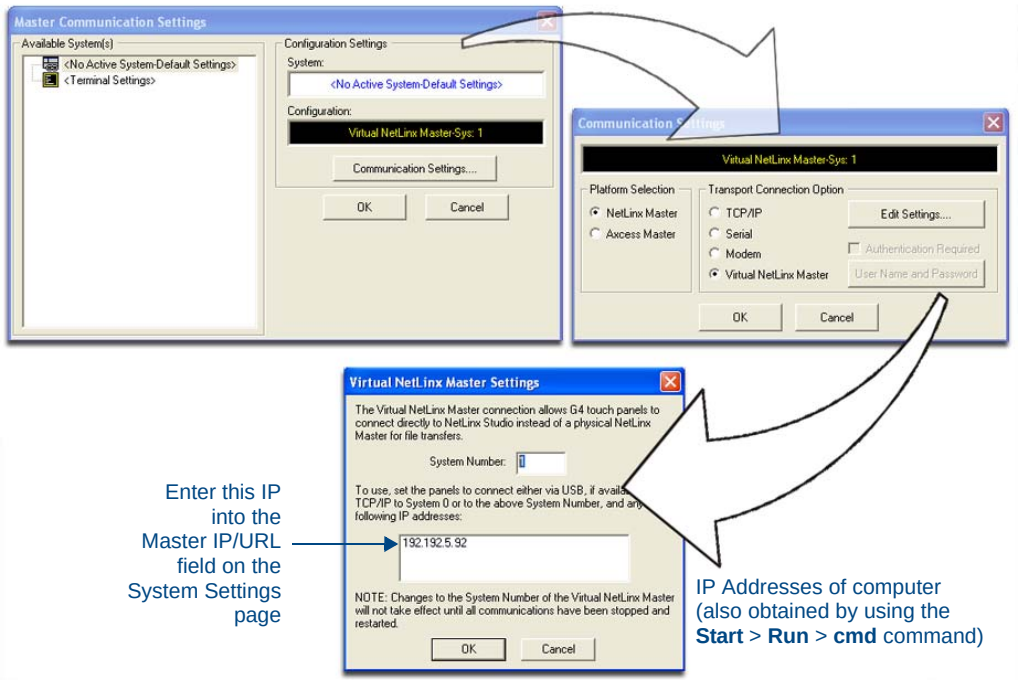

Master Communication Settings
Available System(s)
<No Active System-Default Settings>
<Terminal Settings>
Configuration Settings
System:
<No Active System-Default Settings>
Configuration:
Virtual NetLinx Master-Sys: 1
Communication Settings....
OK
Cancel
Communication Settings
Virtual NetLinx Master-Sys: 1
Platform Selection
NetLinx Master
Axcess Master
Transport Connection Option
TCP/IP
Serial
Modem
Virtual NetLinx Master
Edit Settings....
Authentication Required
User Name and Password
OK
Cancel
Virtual NetLinx Master Settings
The Virtual NetLinx Master connection allows G4 touch panels to connect directly to NetLinx Studio instead of a physical NetLinx Master for file transfers.
System Number:
To use, set the panels to connect either via USB, if avail
TCP/IP to System 0 or to the above System Number, and an
following IP addresses:
192.192.5.92
NOTE: Changes to the System Number of the Virtual NetLinx Master will not take effect until all communications have been stopped and restarted.
OK
Cancel
Enter this IP into the Master IP/URL field on the System Settings page
IP Addresses of computer (also obtained by using the Start > Run > cmd command)

FIG. 65 Assigning Communication Settings and TCP/IP Settings for a Virtual Master

4. Click the **Communications Settings** button to open the Communications Settings dialog.

5. Click on the **NetLinx Master** radio button (*from the Platform Selection section*) to indicate that you are working as a NetLinx Master.
6. Click on the **Virtual Master** radio box (*from the Transport Connection Option section*) to indicate you are wanting to configure the PC to communicate with a panel. Everything else such as the Authentication is greyed-out because you are not going through the Master's UI.
7. Click the **Edit Settings** button (*on the Communications Settings dialog*) to open the Virtual NetLinx Master Settings dialog (FIG. 65).
8. From within this dialog enter the System number (***default is 1***) and note the IP Address of the target PC being used as the Virtual Master. This IP Address can also be obtained by following these procedures:
   - On your PC, click **Start > Run** to open the Run dialog.
   - Enter **cmd** into the Open field and click **OK** to open the command DOS prompt.
   - From the **C:\>** command line, enter **ipconfig** to display the IP Address of the PC. This information is entered into the *Master IP/URL* field on the panel.
9. Click **OK** three times to close the open dialogs, save your settings, and return to the main NetLinx Studio application.
10. Click the **OnLine Tree** tab in the Workspace window to view the devices on the Virtual System. *The default System value is one*.
11. Right-click on the *Empty Device Tree/System* entry and select **Refresh System** to re-populate the list.
12. Power-up your panel and press and hold the grey Front Setup Access button (**for 3 seconds**) to continue with the setup process and proceed to the Setup page.
13. Select **Protected Setup > System Settings** (located on the lower-left) to open the System Settings page (FIG. 66).

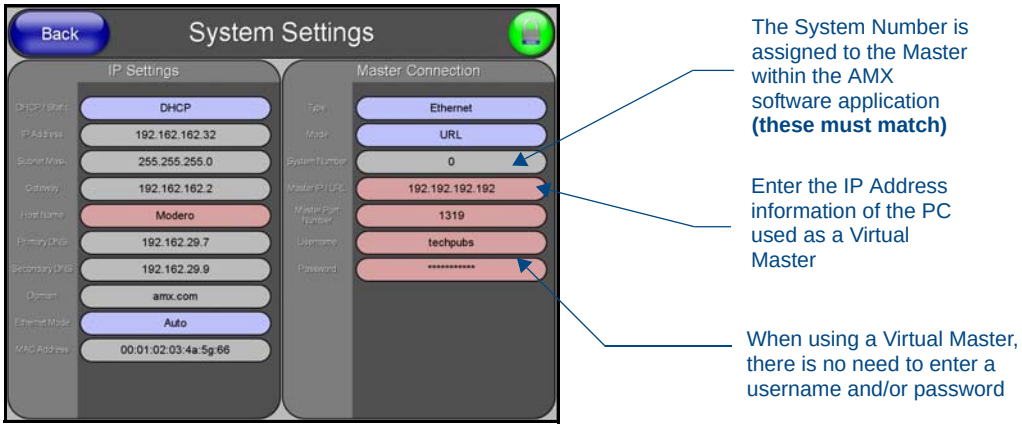


FIG. 66 Sample System Settings page (for Virtual Master communication)

14. Press the blue *Type* field (***from the Master Connection section***) until the choice cycles to the word **Ethernet.** ***ICSNet communication cannot be used on either 1200V-Series or VG-Series panels.***
15. Press the *Mode* field until the choice cycles to the word **URL**.
    - By selecting **URL**, the System Number field becomes read-only (grey) because the panel pulls this value directly from the communicating target Master (virtual or not). A Virtual Master system value can be set within the active AMX software applications such as: NetLinx Studio, TPD4, or IREdit.
16. Press the *Master IP/URL* field to open a Keyboard and enter the IP Address of the PC used as the Virtual Master.
17. Click **Done** to accept the new value and return to the System Settings page.
18. Do not alter the Master Port Number value (*this is the default value used by NetLinx*).
19. Press the **Back** button to open the Protected Setup page.
20. Press the on-screen **Reboot** button to both save any changes and restart the panel.

Master Connection section - NetLinx Master Ethernet IP Address - URL Mode

In this mode, enter the System Number (**zero** for an unknown System Number) and the IP/URL of the Master (Master Port Number is defaulted to **1319**).

1. Press the blue *Type* field (***from the Master Connection section***) until the choice cycles to the word **Ethernet**. Refer to the *System Settings Page* section on page 107 for more information about the fields on this page.
2. Press the *Mode* field until the choice cycles to the word **URL**.

   By selecting **URL**, the System Number field becomes read-only (grey) because the panel pulls this value directly from the communicating target Master (virtual or not). A Virtual Master system value can be set within the active AMX software applications such as: NetLinx Studio, TPD4, or IREdit.

If the panel does not appear within the OnLine Tree tab of the Workspace window of NetLinx Studio, check to make sure that the NetLinx Master System Number (from within the Device Addressing dialog) is correctly assigned.

3. Press the *Master IP/URL* field to open a Keyboard and enter the Master IP Address **(obtained from the Diagnostics - Networking Address dialog of the NetLinx Studio application)**.
4. Click **Done** to accept the new value and return to the System Settings page.
5. Do not alter the Master Port Number value (*this is the default value used by NetLinx*).
6. Enter a username and password (*into their respective fields*) if the target Master has been previously secured.
7. Press the **Back** button to open the Protected Setup page.
8. Press the on-screen **Reboot** button to both save any changes and restart the panel.

Master Connection section - NetLinx Master Ethernet IP Address - Listen Mode

In this mode, you must add the Modero panel IP Address into the URL List of the Master (using NetLinx Studio). This mode sets the Modero panel to "listen" for broadcasts from the Master (using the panel IP from its URL list).

1. Obtain either a Static IP for the Modero panel (from your System Administrator) or a DHCP Address from the IP Settings of the System Settings page.
   - The *DHCP/Static* field (in the IP Settings section of the System Settings page) must be set to **DHCP** to get Dynamic IP information for the panel.
   - Press the on-screen **Reboot** (from the Protected Setup page) to both save any changes and restart the panel.
   - After power-up, press the grey Front Setup Access button for **3 seconds** to access the Setup page.
   - Navigate to the **Setup > Protected Setup > System Settings** page and note the newly obtained Dynamic IP Address information from the IP Settings section. This information is then entered into the URL List for the connected NetLinx Master.
2. Toggle the blue *Type* field until **Ethernet** is selected (*from the Master Connection section of the System Settings page*).
3. Press the *Mode* field (to set the connection Mode) until the choice cycles to the word **Listen**.
4. Enter a username and password (*into their respective fields*) if the target Master has been previously secured.
5. Select the **OnLine Tree** tab from the Workspace window.
6. Select **Diagnostics > URL Listing** from the Main menu (FIG. 67).

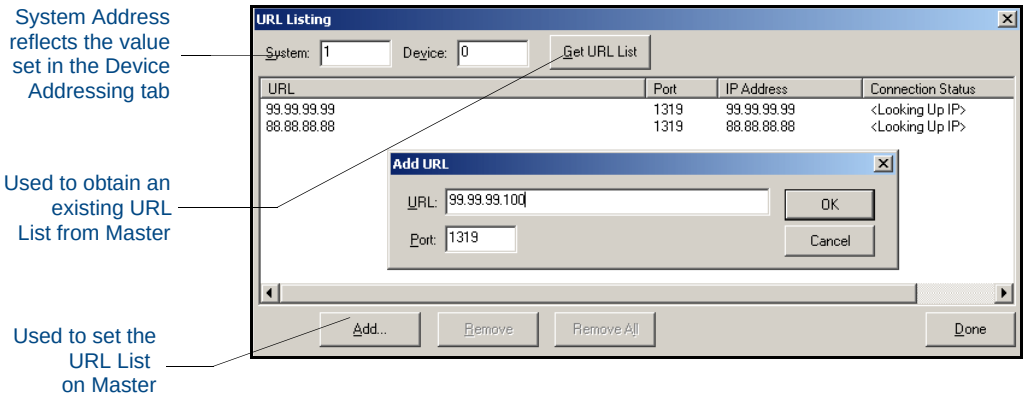


FIG. 67 URL List dialog

7. Enter the **System** and **Device** number for the specific Master associated with your panel (*as seen in the Online Tree tab*).
8. Click **Add** and enter the IP Address of the Modero touch panel into the *Add URL* dialog box.
9. Click **OK** to enter your IP Address and add it to the list.
10. Click **Done** once you are finished adding your panel information to the list.
11. Press the on-screen **Reboot** button to save any changes and restart the panel.

Master Connection section - NetLinx Master Ethernet IP Address - Auto Mode

In this mode, enter the System Number of the NetLinx Master. This mode instructs the Modero to search for a Master that uses the same System Number (assigned within the Master Connection section) and **resides on the same Subnet as itself.**

1. Toggle the blue *Type* field until **Ethernet** is selected (*from the Master Connection section of the System Settings page*).
2. Press the *Mode* field until the choice cycles to the word **Auto**.
3. Press the *System Number* field to launch a Keypad and enter the value for the system number of the NetLinx Master. *This value can be obtained from the NetLinx Studio program > OnLine Tree of the Workspace window.*
4. Do not alter the IP Settings section, of the System Settings page, as these fields are not applicable to this connection mode.
5. Enter a username and password (*into their respective fields*) if the target Master has been previously secured.
6. Press the on-screen **Reboot** button to both save any changes and restart the panel.
7. Press the grey Front Setup Access button for **3 seconds** to open the Setup page and confirm there is an active connection.

NOTE

The NetLinx Master and the Modero panel must both be on the same Subnet.

Using G4 Web Control to Interact with a G4 Panel

The G4 Web Control feature allows you to use a PC to interact with a G4 enabled panel via the web. This feature works in tandem with the new browser-capable NetLinx Security firmware update (***build 300 or higher***). G4 Web Control is only available with the latest Modero panel firmware.

Refer to the *G4 Web Control Page* section on page 98 for more detailed field information.

NOTE

*Verify your NetLinx Master (ME260/64 or NI-Series) has been installed with the latest firmware KIT file from **www.amx.com**. Refer to your NetLinx Master Instruction Manual for more detailed information on the use of the new web-based NetLinx Security.*

1. Press the grey Front Setup Access button for **3 seconds** to open the Setup page.
2. Press the **Protected Setup** button (located on the lower-left of the panel page) to open the Protected Setup page and display an on-screen keypad.
3. Enter ***1988*** into the Keypad's password field (***1988*** *is the default password*).

NOTE

Clearing Password #5, from the initial Password Setup page, removes the need for you to enter the default password before accessing the Protected Setup page.

4. Press **Done** when finished.
5. Press the **G4 Web Control** button to open the G4 Web Control page (FIG. 68).

FIG. 68 G4 Web Control page

6. Press the **Enable/Enabled** button until it toggles to **Enabled** (*light blue color*).
7. The *Network Interface Select* field is read-only and displays the method of communication to the web. **Verify you have selected the proper interface connection as this field does not auto-detect the connection type being used (*see below*).**
   - **Wired** is used when a direct Ethernet connection is being used for communication to the web. *This is the default setting if either no wireless interface card is detected or if both an Ethernet and wireless card connection is detected by the panel.*
   - **Wireless** is used when a wireless card is detected within the internal card slot. This method provides an indirect communication to the web via a pre-configured Wireless Access Point.
8. Press the *Web Control Name* field to open the Web Name keyboard.
9. From the Web Name keyboard, enter a unique alpha-numeric string to identify this panel. This information is used by the NetLinx Security Web Server to display on-screen links to the panel. *The on-screen links use the IP Address of the panel and not the name for communication* (FIG. 69).
10. Press **Done** after you are finished assigning the alpha-numeric string for the Web Control name.
11. Press the *Web Control Password* field to open the Web Password keyboard.

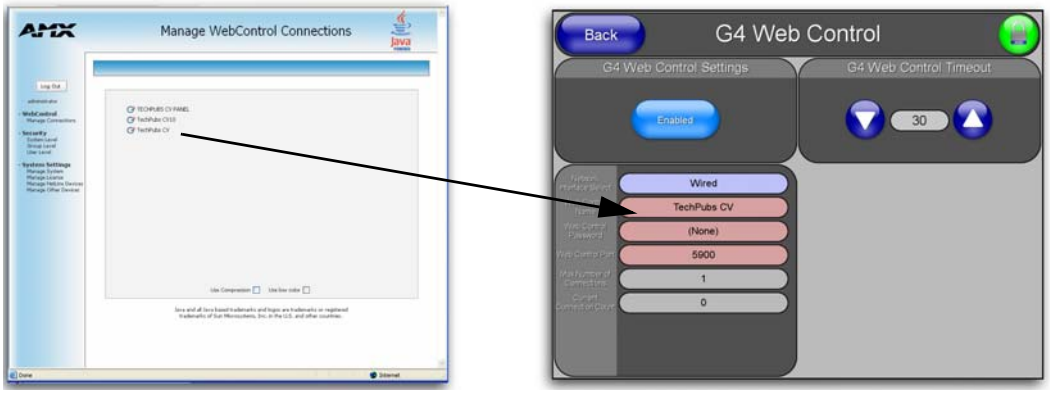


FIG. 69 Sample relationship between G4 Web Control and Mange WebControl Connections window

12. From the Web Password keyboard, enter a unique alpha-numeric string to be assigned as the G4 Authentication session password associated with VNC web access of this panel.
13. Press **Done** after you are finished assigning the alpha-numeric string for the Web Control password.
14. Press the *Web Control Port* field to open the Web Port Number keypad.
15. Within the keypad, enter a unique numeric value to be assigned to the port the VNC Web Server is running on. The default value is ***5900***.
16. Press **Done** when you are finished entering the value. *The remaining fields within the G4 Web Control Settings section of this page are read-only and cannot be altered.*
17. Press the **Up/Down** arrows on either sides of the G4 Web Control *Timeout* field to increase or decrease the amount of time the panel can remain idle (***no cursor movements***) before the session is closed and the user is disconnected.
18. Press the **Back** button to open the Protected Setup page.
19. Press the on-screen **Reboot** button to save any changes and restart the panel.

NOTE

Verify your NetLinx Master's IP Address and System Number have been properly entered into the Master Connection section of the System Settings page.

Using your NetLinx Master to control the G4 panel

Refer to your particular NetLinx Master's instruction manual for detailed information on how to download the latest firmware from **www.amx.com**. This firmware build enables SSL certificate identification and encryption, HTTPS communication, ICSP data encryption, and disables the ability to alter the Master security properties via a TELNET session.

NOTE

In order to fully utilize the SSL encryption, your web browser should incorporate the an encryption feature. This encryption level is displayed as a Cipher strength.

Once the Master's IP Address has been set through NetLinx Studio version 2.x or higher:

1. Launch your web browser.
2. Enter the IP Address of the target Master (***ex: http://198.198.99.99***) into the web browser's *Address* field.
3. Press the **Enter** key on your keyboard to begin the communication process between the target Master and your computer.
   - Initially, the Master Security option is disabled (from within the **System Security** page) and no username and password is required for access or configuration.
   - Both HTTP and HTTPS Ports are enabled by default (via the **Manage System > Server** page).

- If the Master has been previously configured for secured communication, click **OK** to accept the AMX SSL certificate (*if SSL is enabled*) and then enter a valid username and password into the fields within the *Login* dialog.

4. Click **OK** to enter the information and proceed to the Master's Manage WebControls window.
5. This Manage WebControl Connections page (FIG. 70) is accessed by clicking on the **Manage connections** link (*within the Web Control section within the Navigation frame*). Once activated, this page displays links to G4 panels running the latest G4 Web Control feature (*previously setup and activated on the panel*).

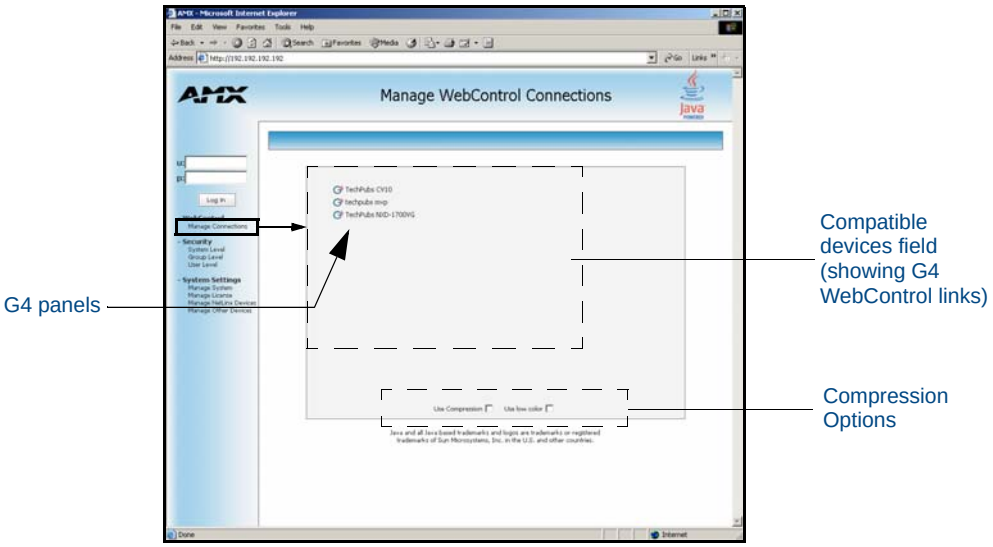


FIG. 70 Manage WebControl Connections page (populated with compatible panels)

6. Click on the G4 panel name link associated with the target panel. A secondary web browser window appears on the screen (FIG. 71).

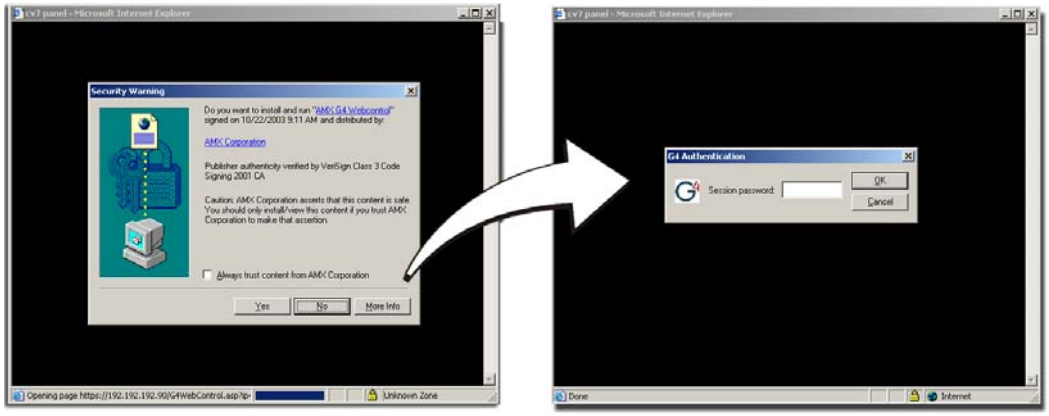


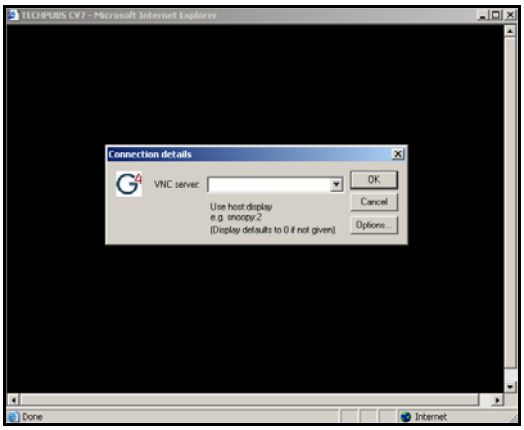
FIG. 71 Web Control VNC installation and Password entry screens

7. Click **Yes** from the Security Alert popup window to agree to the installation of the G4 WebControl application on your computer. This application contains the necessary Active X and VNC client applications necessary to properly view and control the panel pages from your computer.

NOTE

The G4 Web Control application is sent by the panel to the computer that is used for communication. Once the application is installed, this popup will no longer appear. This popup will only appear if you are connecting to the target panel using a different computer.

8. In some cases, you might get a *Connection Details* dialog (FIG. 72) requesting a VNC Server IP Address. This is the IP Address not the IP of the Master but of the target touch panel. Depending on which method of communication you are using, it can be found in either the:
   - **Wired Ethernet** - System Settings > IP Settings section within the *IP Address* field.
   - **Wireless** - Wireless Settings > IP Settings section within the *IP Address* field.
   - If you do not get this field continue to step 9.



IP Address of touch panel obtained from IP Settings section of the System Settings page

FIG. 72 Connection Details dialog

9. If a WebControl password was setup on the G4 WebControl page, a G4 Authentication Session password dialog box appears on the screen within the secondary browser window.
10. Enter the Web Control session password into the *Session Password* field (FIG. 71). *This password was previously entered into the Web Control Password field within the G4 Web Control page on the panel.*
11. Click **OK** to send the password to the panel and begin the session. A confirmation message appears stating *"Please wait, Initial screen loading."*.

The secondary window then becomes populated with the same G4 page being displayed on the target G4 panel. A small circle appears within the on-screen G4 panel page and corresponds to the location of the mouse cursor. A left-mouse click on the computer-displayed panel page equates to an actual touch on the target G4 panel page.

Upgrading Modero Firmware

Before beginning the Upgrade process:

- Setup and configure your NetLinx Master. Refer to your particular NetLinx Master instruction manual for detailed setup procedures.
- Calibrate and prepare the communication pages on the Modero panel for use. Refer to the *Panel Calibration* section on page 45.
- Refer to the NetLinx Studio version 2.x or higher Help file for more information on uploading files via Ethernet.
- Configure your panel for either direct connect or wireless communication. Refer to the *Configuring Communication* section on page 47 for more detailed information about Ethernet or Wireless communication.

WARNING

It is recommended that firmware Kit files only be transferred over a direct Ethernet connection and only when the panel is connected to a power supply.
If battery power or wireless connection fails during a firmware upgrade, the panel flash file system may become corrupted.

The process of updating firmware involves the use of a communicating NetLinx Master. The required steps for updating firmware to a Modero panel are virtually identical to those necessary for updating Kit files to a NetLinx Master (*except the target device is a panel instead of a Master*). Refer to either your Master's literature or Studio 2.x Help file for those procedures.

WARNING

A touch panel which is not using a valid username and password will not be able to communicate with a secured Master. If you are updating the firmware on or through a panel which is not using a username or password field, you must first remove the Master Security feature to establish an unsecured connection.

Upgrading the Modero Firmware via the USB port

Before beginning with this section, verify your panel is powered and the Type-A USB connector is securely inserted into the PC's USB port. **The panel must be powered-on before connecting the mini-USB connector to the panel.**

WARNING

Establishing a USB connection between the PC and the panel, prior to installing the USB Driver will cause a failure in the USB driver installation.

Step 1: Configure the panel for a USB Connection Type

1. After the installation of the USB driver has been completed, confirm the proper installation of the large Type-A USB connector to the PC's USB port, and restart your machine.
2. After the panel powers-up, press and hold the grey Front Setup Access button (**for 3 seconds**) to continue with the setup process and proceed to the Setup page.
3. Select **Protected Setup > System Settings** (located on the lower-left) to open the System Settings page.
4. Toggle the blue *Type* field (***from the Master Connection section***) until the choice cycles to **USB**.

NOTE

***ALL** fields are then greyed-out and read-only, but still display any previous network information.*

5. Press the **Back** button on the touch panel to return to the Protected Setup page.
6. Press the on-screen **Reboot** button to both save any changes and **restart the panel.** *Remember that the panel's connection type must be set to **USB** prior to rebooting the panel and prior to inserting the USB connector.*

7. **ONLY AFTER** the unit displays the first panel page, **THEN** insert the mini-USB connector into the Program Port on the panel. It may take a minute for the panel to detect the new connection and send a signal to the PC (*indicated by a green System Connection icon*).
   - If a few minutes have gone by and the System Connection icon still does not turn green, complete the procedures in the following section to setup the Virtual Master and refresh the System from the Online Tree. This action sends out a request to the panel to respond and completes the communication (*turning the System Connection icon green*).
8. Navigate back to the System Settings page.

Step 2: Prepare NetLinx Studio for communication via the USB port

1. Launch NetLinx Studio 2.x (default location is **Start > Programs > AMX Control Disc > NetLinx Studio 2 > NetLinx Studio 2**).
2. Select **Settings > Master Communication Settings**, from the Main menu to open the Master Communication Settings dialog (FIG. 73).

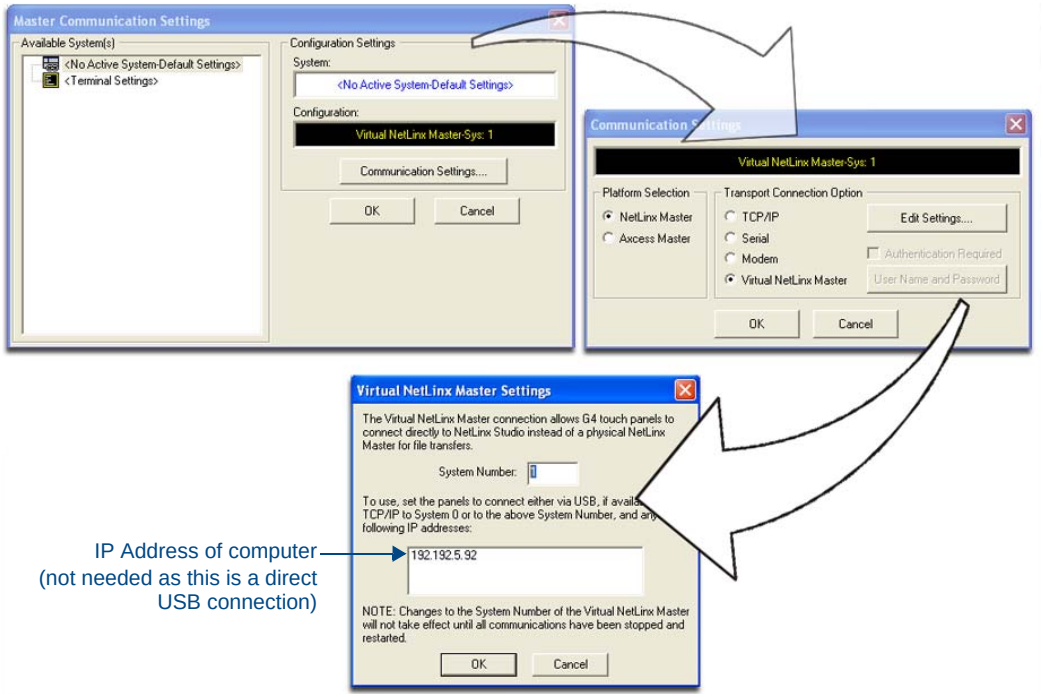

Master Communication Settings
Available System(s)
<No Active System-Default Settings>
<Terminal Settings>
Configuration Settings
System:
<No Active System-Default Settings>
Configuration:
Virtual NetLinx Master-Sys: 1
Communication Settings....
OK
Cancel
Communication Settings
Virtual NetLinx Master-Sys: 1
Platform Selection
NetLinx Master
Axcess Master
Transport Connection Option
TCP/IP
Serial
Modem
Virtual NetLinx Master
Edit Settings....
Authentication Required
User Name and Password
OK
Cancel
Virtual NetLinx Master Settings
The Virtual NetLinx Master connection allows G4 touch panels to connect directly to NetLinx Studio instead of a physical NetLinx Master for file transfers.
System Number:
1
To use, set the panels to connect either via USB, if available, or via TCP/IP to System 0 or to the above System Number, and any of the following IP addresses:
192.192.5.92
NOTE: Changes to the System Number of the Virtual NetLinx Master will not take effect until all communications have been stopped and restarted.
OK
Cancel
IP Address of computer
(not needed as this is a direct
USB connection)

FIG. 73 Assigning Communication Settings for a Virtual Master

3. Click the **Communications Settings** button to open the *Communications Settings* dialog.
4. Click on the **NetLinx Master** radio button (*from the Platform Selection section*) to indicate that you are working as a NetLinx Master.
5. Click on the **Virtual Master** radio box (*from the Transport Connection Option section*) to indicate you are wanting to configure the PC to communicate directly with a panel. Everything else such as the Authentication is greyed-out because you are not going through the Master's UI.
6. Click the **Edit Settings** button (*on the Communications Settings dialog*) to open the *Virtual NetLinx Master Settings* dialog (FIG. 73).
7. From within this dialog enter the System number (default is **1**).
8. Click **OK** three times to close the open dialogs, save your settings, and return to the main NetLinx Studio application.
9. Click the **OnLine Tree** tab in the Workspace window to view the devices on the Virtual System. *The default System value is one*.
10. Right-click on the *Empty Device Tree/System* entry and select **Refresh System** to re-populate the list. ***The panel will not appear as a device below the virtual system number (in the Online Tree tab) until***

both the system number used in step 7 for the VNM is entered into the Master Connection section of the System Settings page and the panel is restarted.

Step 3: Confirm and Upgrade the firmware via the USB port

Use the CC-USB Type-A to Mini-B 5-wire programming cable (**FG10-5965**) to provide communication between the mini-USB Program port on the touch panel and the PC. This method of communication is used to transfer firmware Kit files and TPD4 touch panel files.

NOTE

A mini-USB connection is only detected after it is installed onto an active panel. Connection to a previously powered panel which then reboots, allows the PC to detect the panel and assign an appropriate USB driver.

1. Verify this direct USB connection (Type-A on the panel to mini-USB on the panel) is configured properly using the steps outlined in the previous two sections.
2. With the panel already configured for USB communication and the Virtual Master setup within NetLinx Studio, its now time to verify the panel is ready to receive files.
3. After the Communication Verification dialog window verifies active communication between the Virtual Master and the panel, click the **OnLine Tree** tab in the Workspace window (FIG. 74) to view the devices on the Virtual System. *The default System value is one*.
4. Right-click on the System entry (FIG. 74) and select **Refresh System** to re-populate the list. Verify the panel appears in the **OnLine Tree** tab of the Workspace window.
   The default Modero panel value is 10001.

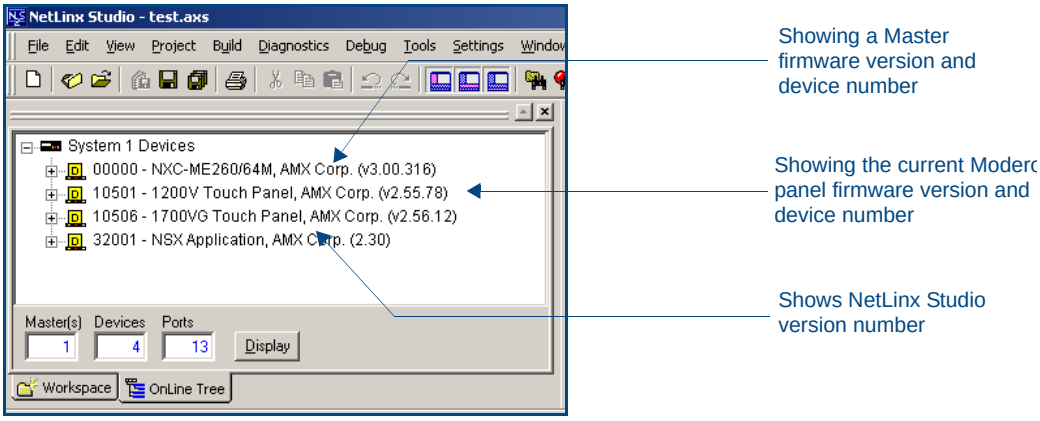

NetLinx Studio - test.axs
File Edit View Project Build Diagnostics Debug Tools Settings Window
System 1 Devices
00000 - NXC-ME260/64M, AMX Corp. (v3.00.316)
10501 - 1200V Touch Panel, AMX Corp. (v2.55.78)
10506 - 1700VG Touch Panel, AMX Corp. (v2.56.12)
32001 - NSX Application, AMX Corp. (2.30)
Master(s) Devices Ports
1 4 13
Display
Workspace
OnLine Tree
Showing a Master firmware version and device number
Showing the current Modero panel firmware version and device number
Shows NetLinx Studio version number

FIG. 74 NetLinx Workspace window (showing panel connection via a Virtual NetLinx Master)

NOTE

*The panel firmware is shown on the right of the listed panel. Download the latest firmware file from **www.amx.com** and then save the Kit file to your computer.*

5. If the panel firmware being used is not current, download the latest Kit file by first logging in to **www.amx.com** and then navigate to **Tech Center > Firmware Files** and from within the **Modero** section of the web page locate your Modero panel.
6. Click on the desired Kit file link and after you've accepted the Licensing Agreement, verify you have downloaded the Modero Kit file to a known location.
7. From within Studio, select **Tools > Firmware Transfers > Send to NetLinx Device** from the Main menu to open the Send to NetLinx Device dialog (**B** in FIG. 75). Verify the panel's System and Device number values match those values listed within the System folder in the **OnLine Tree** tab of the Workspace window (**A** in FIG. 75).

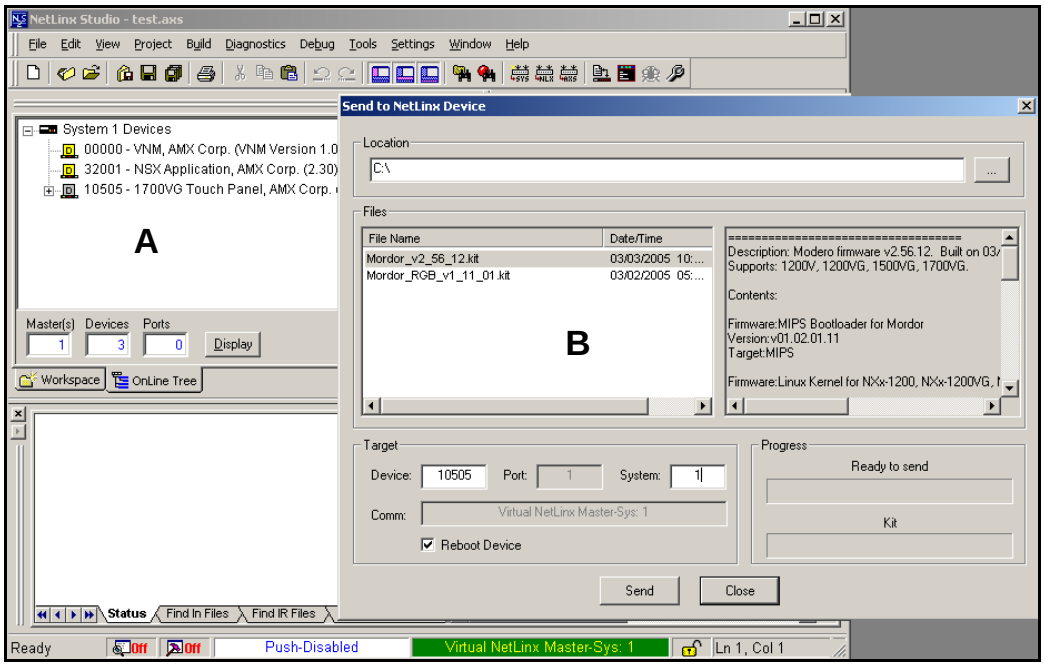


FIG. 75 Using USB for a Virtual Master transfer

8. Select the panel's Kit file from the **Files** section.
9. Enter the **Device** value associated with the panel and the **System** number associated with the Master (*listed in the OnLine Tree tab of the Workspace window*). *The Port field is greyed-out.*
10. Click the **Reboot Device** checkbox. This causes the touch panel to reboot after the firmware update process is complete. *The reboot of the panel can take up 30 seconds after the firmware process has finished.*
11. Click **Send** to begin the transfer. The file transfer progress is indicated on the bottom-right of the dialog (**B** in FIG. 75).
12. As the panel is rebooting, temporarily unplug the USB connector on the panel until the panel has completely restarted.
13. Reconnect the USB connector to the panel.
14. Right-click the associated System number and select **Refresh System**. This causes a refresh of all project systems, establishes a new connection to the Master, and populates the System list with devices on your particular system.
15. Confirm the panel has been properly updated to the correct firmware version.

Upgrading the Modero Firmware via an IP Address

Before beginning with this section, verify that your panel is powered and connected to the NetLinx Master through an Ethernet connection (direct or wireless).

Step 1: Prepare the Master for communication via an IP

1. Obtain the IP Address of the NetLinx Master from your System Administrator. If you do not have an IP Address for the Master, refer to your particular Master's instruction manual for more information on obtaining this IP Address using NetLinx Studio 2.
   - From the **Online Tree** tab of the Workspace window, select the NetLinx Master.
   - Follow steps outlined in either the *Obtaining or Assigning the Master's IP Address* sections from your particular NetLinx Master instruction manual to use an address.
   - Note the IP Address and Gateway information.
2. Launch NetLinx Studio 2.x (default location is **Start > Programs > AMX Control Disc > NetLinx Studio 2 > NetLinx Studio 2**).

3. Select **Settings > Master Communication Settings** from the Main menu to open the Master Communication Settings dialog (FIG. 76).

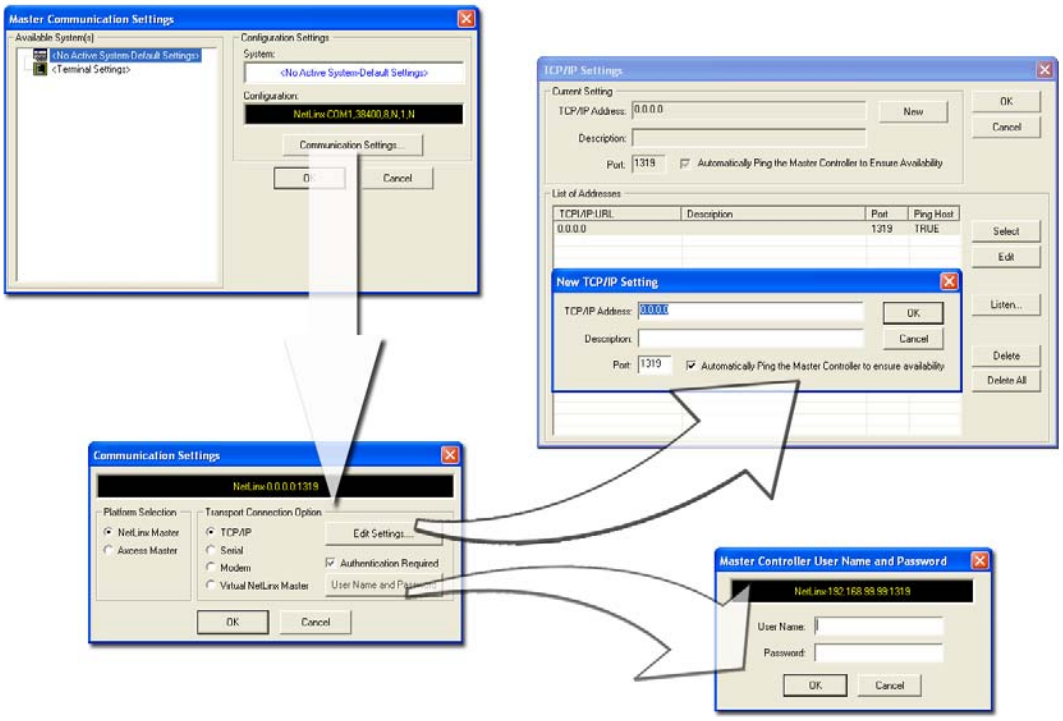


FIG. 76 Assigning Communication Settings and TCP/IP Settings

4. Click the **Communications Settings** button to open the Communications Settings dialog.
5. Click on the **NetLinx Master** radio button (*from the Platform Selection section*) to indicate you are working with a NetLinx Master (such as the NXC-ME260/64 or NI-Series of Integrated Controllers).
6. Click on the **TCP/IP** radio button (*from the Transport Connection Option section*) to indicate you are connecting to the Master through an IP Address.
7. Click the **Edit Settings** button (*on the Communications Settings dialog*) to open the TCP/IP Settings dialog (FIG. 76). This dialog contains a series of previously entered IP Address/URLs and their associated names, all of which are stored within Studio and are user-editable.
8. Click the **New** button to open the New TCP/IP Settings dialog where you can enter both a previously obtained DHCP or Static IP Address and an associated description for the connection into their respective fields.
9. Place a checkmark within the *Automatically Ping the Master Controller to ensure availability* radio box to make sure the Master is initially responding online before establishing full communication.
10. Click **OK** to close the current New TCP/IP Settings dialog and return to the previous TCP/IP Settings dialog where you must locate your new entry within the List of Addresses section.
11. Click the **Select** button to make that the currently used IP Address communication parameter.
12. Click **OK** to return to the Communications Settings dialog and place a checkmark within the *Authentication Required* radio box if your Master has been previously secured with a username/password.
13. Click on the **Authentication Required** radio box (if the Master is secured) and then press the **User Name and Password** button to open the Master Controller User Name and Password dialog.
14. Within this dialog, you must enter a previously configured username and password (with sufficient rights) before being able to successfully connect to the Master.
15. Click **OK** to save your newly entered information and return to the previous Communication Settings dialog where you must click **OK** again to begin the communication process to your Master.

If you are currently connected to the assigned Master, a popup asks whether you would want to temporarily stop communication to the Master and apply the new settings.

16. Click **Yes** to interrupt the current communication from the Master and apply the new settings.
17. Click **Reboot** (*from the Tools > Reboot the Master Controller dialog*) and wait for the System Master to reboot. *The STATUS and OUTPUT LEDs should begin to alternately blink during the incorporation. Wait until the STATUS LED is the only LED to blink.*
18. Press **Done** once until the *Master Reboot Status* field reads **Reboot of System Complete**.
19. Click the **OnLine Tree** tab in the Workspace window to view the devices on the System. *The default System value is one (1).*
20. Right-click the associated System number and select **Refresh System**. This establishes a new connection to the specified System and populates the list with devices on that system. *The communication method is then highlighted in green on the bottom of the NetLinx Studio window.*

Step 2: Prepare the panel for communication via an IP

1. Press the blue *Type* field (*from the Master Connection section*) until the choice cycles to the word **Ethernet**.
2. Press the blue *Mode* field until the choice cycles to the word **URL**.
   - By selecting **URL**, the System Number field becomes read-only (grey) because the panel pulls this value directly from the communicating target Master (virtual or not). A Virtual Master system value can be set within the active AMX software applications such as: NetLinx Studio, TPD4, or IREdit.
3. Press the red *Master IP/URL* field to open a Keyboard and enter the NetLinx Master's IP Address (**obtained from the Diagnostics - Networking Address dialog of the NetLinx Studio application**).
4. Click **Done** to accept the new value and return to the System Configuration page.
5. Do not alter the Master Port Number value (*this is the default value used by NetLinx*).
6. Press the **Back** button to return to the Protected Setup page and press the on-screen **Reboot** button to restart the panel and save any changes.

Step 3: Verify and Upgrade the panel firmware via an IP

1. Click the **OnLine Tree** tab in the Workspace window to view the devices on the System. *The default System value is one.*
2. Right-click the associated System number (from the Workspace window) and select **Refresh System** to detect of all devices on the current system, establish a new connection to the Master, and refresh the System list with devices on that system.
3. After the Communication Verification dialog window verifies active communication between the PC and the Master, verify the panel appears in the **OnLine Tree** tab of the Workspace window (FIG. 77). *The default Modero panel value is 10001.*

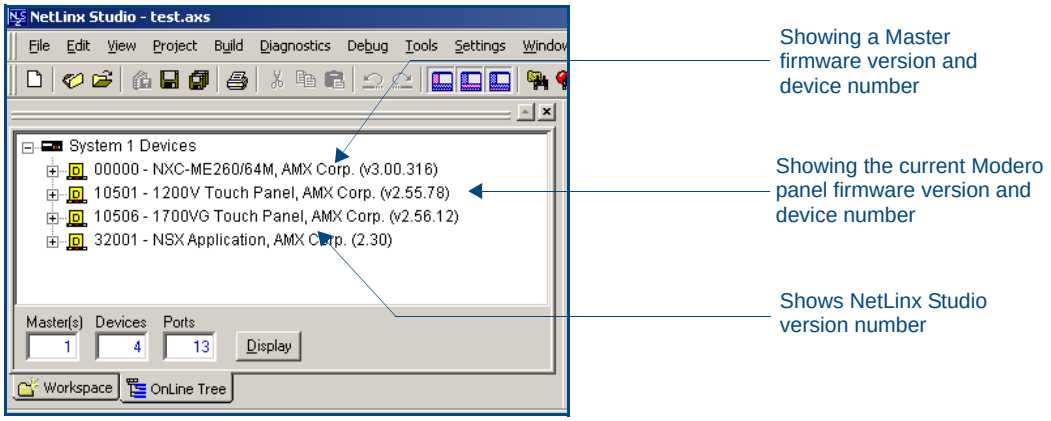

NetLinx Studio - test.axs
File Edit View Project Build Diagnostics Debug Tools Settings Window
System 1 Devices
00000 - NXC-ME260/64M, AMX Corp. (v3.00.316)
10501 - 1200V Touch Panel, AMX Corp. (v2.55.78)
10506 - 1700VG Touch Panel, AMX Corp. (v2.56.12)
32001 - NSX Application, AMX Corp. (2.30)
Master(s) Devices Ports
1 4 13
Display
Workspace
OnLine Tree
Showing a Master firmware version and device number
Showing the current Modero panel firmware version and device number
Shows NetLinx Studio version number

FIG. 77 NetLinx Workspace window (showing connected Modero panel)

NOTE

The panel firmware is shown on the right of the listed panel.

4. If the panel firmware being used is not current, download the latest Kit file by first logging in to **www.amx.com** and then navigate to **Tech Center > Firmware Files** and from within the **Modero** section of the web page locate your Modero panel.
5. Click on the desired Kit file link and after you've accepted the Licensing Agreement, verify you have downloaded the Modero Kit file to a known location.
6. From within Studio, select **Tools > Firmware Transfers > Send to NetLinx Device** from the Main menu to open the Send to NetLinx Device dialog (FIG. 78). Verify the panel's System and Device number values match those values listed within the System folder in the **OnLine Tree** tab of the Workspace window.

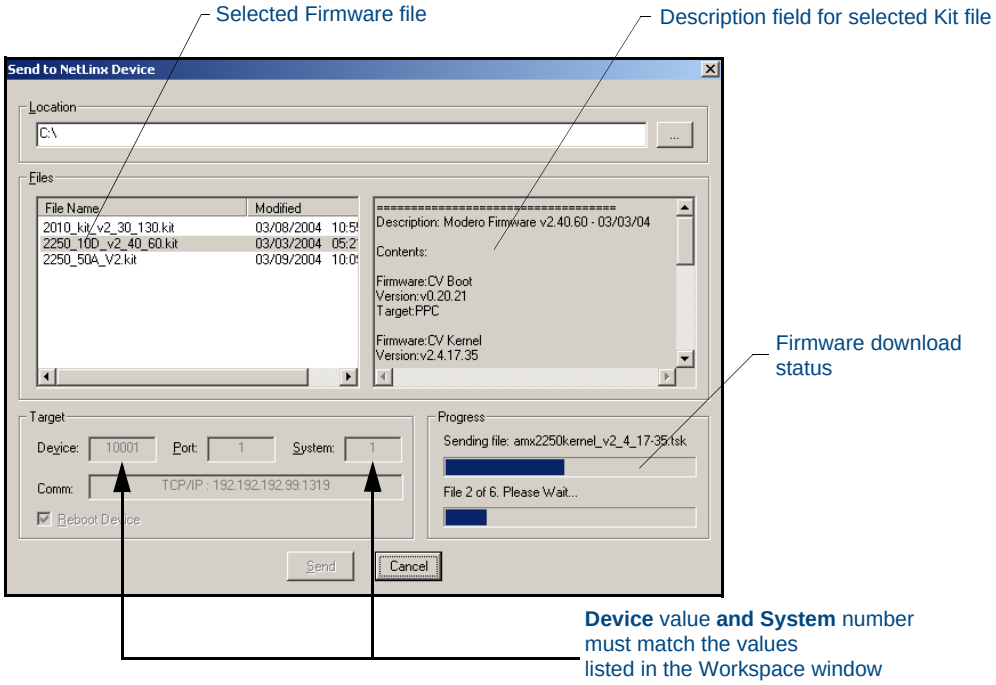


FIG. 78 Send to NetLinx Device dialog (showing Modero firmware update via IP)

7. Select the panel's Kit file from the **Files** section (FIG. 78).

8. Enter the **Device** value associated with the panel and the **System** number associated with the Master (*listed in the OnLine Tree tab of the Workspace window*). *The Port field is greyed-out.*
9. Click the **Reboot Device** checkbox. This causes the touch panel to reboot after the firmware update process is complete. *The reboot of the panel can take up 30 seconds after the firmware process has finished.*
10. Click **Send** to begin the transfer. The file transfer progress is indicated on the bottom-right of the dialog (FIG. 78).
11. Click **Close** (*after the panel reboots*) to return to the main program.
12. Right-click the associated System number and select **Refresh System**. This causes a refresh of all project systems, establishes a new connection to the Master, and populates the System list with devices on your particular system.
13. Confirm the panel has been properly updated to the correct firmware version.

Upgrading Accessory Devices via the USB

The following accessory devices are firmware upgradeable:

- NXA-BASE/B Battery Base (**FG2255-10**)

This device is not given a unique device number which would ordinarily appear within the Online Tree tab of NetLinx Studio. It appears below the target panel which it is a part of as seen below in FIG. 79.

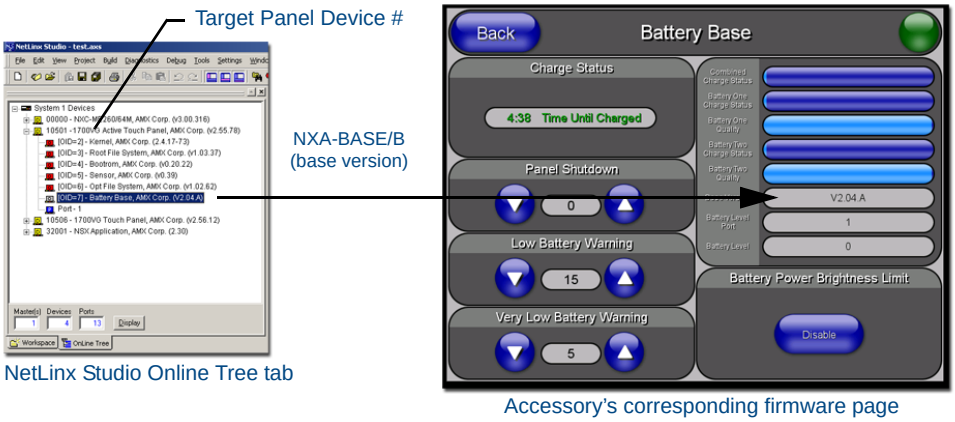


FIG. 79 Location of Firmware version information within NetLinx Studio

The only way to upgrade the firmware of an accessory item is to send the accessory's firmware through a target panel. Its this panel's device number which is entered within the *Send to NetLinx Device transfer* dialog in Studio.

Step 1: Prepare the NXA-BASE/B for firmware transfer via USB

Before beginning with this section:

- Unplug any connectors from the rear of the NXT panel (power, Ethernet, etc.).
- Refer to the *Installing the NXA-BASE/B to an NXT Modero Panel* section on page 23 for installation procedures to mount the NXT atop the battery base.

WARNING

DO NOT PLACE BATTERIES IN THE BASE BEFORE CONNECTING IT TO THE NXT PANEL*. Insert batteries into the NXA-BASE/B* ***ONLY AFTER*** *the base has been installed onto the bottom of the NXT panel.*
Having batteries in the base before connection can damage the battery base.

- Verify your NXA-BASE/B is securely attached to the bottom of the NXT panel.
- Once the base is secured, side out the battery compartment and install the batteries into the battery base. Once the batteries are installed, close the compartment.
- Reconnect all rear connectors to the NXT panel.

1. Complete the instructions for configuring the NetLinx Master for IP communication found in the *Upgrading the Modero Firmware via the USB port* section on page 73.

2. Press the grey Front Setup Access button for **3 seconds** to open the Setup page.
3. Press the **Battery Base** button to open the Battery Base page (FIG. 80).

FIG. 80 Battery Base page

NOTE

*The battery base firmware is shown on the right of the Battery Base page. Verify you have downloaded the latest firmware file from **www.amx.com** and then save the Kit file to your computer.*

Step 2: Upgrade the NXA-BASE/B firmware via USB

1. Complete the procedures outlined in the *Step 1: Configure the panel for a USB Connection Type* section on page 73.
2. Prepare NetLinx Studio for communication to the panel via a Virtual Master by following the procedures outlined in the *Step 2: Prepare NetLinx Studio for communication via the USB port* section on page 74.
3. After the Communication Verification dialog window verifies active communication between the Virtual Master and the panel, click the **OnLine Tree** tab in the Workspace window to view the devices on the Virtual System. *The default System value is one*.
4. Right-click on the System entry and select **Refresh System** to re-populate the list. Verify the panel appears in the **OnLine Tree** tab of the Workspace window.
   The default Modero panel value is 10001.
5. Locate the latest Kit file by first logging in to **www.amx.com** and then navigate to **Tech Center > Firmware Files** and from within the **Modero** section of the web page locate the Battery Base.
6. Click on the desired Kit file link and after you've accepted the Licensing Agreement, verify you have downloaded the Modero Battery Base Kit file to a known location.
7. From within Studio, select **Tools > Firmware Transfers > Send to NetLinx Device** from the Main menu to open the Send to NetLinx Device dialog. Verify the panel's System and Device number values match those values listed within the System folder in the **OnLine Tree** tab of the Workspace window.
8. Select the battery base's Kit file from the **Files** section.
9. Enter the **Device** number associated with the panel and the **System** number associated with the Master (*listed in the OnLine Tree tab of the Workspace window*). *The Port field is greyed-out.*

NOTE

The firmware for the battery base can not be downloaded directly. Download of the Kit file to the BASE/1 is done through the panel.

10. Click the **Reboot Device** checkbox. This causes the touch panel to reboot after the firmware update process is complete. *The reboot of the panel can take up 30 seconds after the firmware process has finished.*
11. Click **Send** to begin the transfer. The file transfer progress is indicated on the bottom-right of the dialog.

12. As the panel is rebooting, temporarily unplug the USB connector on the panel until the panel has completely restarted.
13. Reconnect the USB connector to the panel.
14. Right-click the associated System number and select **Refresh System**. This causes a refresh of all project systems, establishes a new connection to the Master, and populates the System list with devices on your particular system.
15. Confirm the base has been properly updated to the correct firmware version by pressing the **Battery Base** button to open the Battery Base page.

Upgrading Accessory Devices via an IP Address

The following accessory devices are firmware upgradeable:

- NXA-BASE/B Battery Base (**FG2255-10**)

This device is not given a unique device number which would ordinarily appear within the **Online Tree** tab of NetLinx Studio. It appears below the target panel which it is a part of as seen in FIG. 79 on page 80.

The only way to upgrade the firmware of an accessory item is to send the accessory's firmware through a target panel. Its this panel's device number which is entered within the *Send to NetLinx Device transfer* dialog in Studio.

NOTE

Firmware can also be downloaded to accessory items via a direct USB connection using the PC as a Virtual Master. In this case, you will still need to know the System and Device Number information of the target panel. For a more detailed description of how to setup this type of connection, refer to the Upgrading Accessory Devices via the USB section on page 80.

Step 1: Prepare the NXA-BASE/B for firmware transfer via an IP

Before beginning with this section:

- Unplug any connectors from the rear of the NXT panel (power, Ethernet, etc.).
- Refer to the *Installing the NXA-BASE/B to an NXT Modero Panel* section on page 23 for installation procedures to mount the NXT atop the battery base.

WARNING

***DO NOT PLACE BATTERIES IN THE BASE BEFORE CONNECTING IT TO THE NXT PANEL**. Insert batteries into the NXA-BASE/B **ONLY AFTER** the base has been installed onto the bottom of the NXT panel.*
Having batteries in the base before connection can damage the battery base.

- Verify your NXA-BASE/B is securely attached to the bottom of the NXT panel.
- Once the base is secured, side out the battery compartment and install the batteries into the battery base. Once the batteries are installed, close the compartment.
- Reconnect all rear connectors to the NXT panel.

1. Complete the instructions for configuring the NetLinx Master for IP communication found in the *Step 1: Prepare the Master for communication via an IP* section on page 76.
2. Press the grey Front Setup Access button for **3 seconds** to open the Setup page.
3. Press the **Battery Base** button to open the Battery Base page (FIG. 81).

FIG. 81 Battery Base page

NOTE

*The battery base firmware is shown on the right of the Battery Base page. Verify you have downloaded the latest firmware file from **www.amx.com** and then save the Kit file to your computer.*

Step 2: Upgrade the NXA-BASE/B firmware via an IP

1. Click on the **OnLine Tree** tab in the Workspace window to view the devices on the System. *The default System value is one*.
2. Right-click the associated System number (from the Workspace) and select **Refresh System** to detect of all devices on the current system, establish a new connection to the Master, and refresh the System list with devices on that system.
3. After the Communication Verification dialog window verifies active communication between the PC and the Master, verify the target panel appears in the **OnLine Tree** tab of the Workspace window. *The default Modero panel value is 10001. The NXA-BASE/B will not appear on the system listing.*
4. Locate the latest Kit file by first logging in to **www.amx.com** and then navigate to **Tech Center > Firmware Files** and from within the **Modero** section of the web page locate the **Modero Battery Base** section of the website.
5. Click on the desired Kit file link and after you've accepted the Licensing Agreement, verify you have downloaded the Modero Battery Base Kit file to a known location.
6. From within Studio, select **Tools > Firmware Transfers > Send to NetLinx Device** from the Main menu to open the Send to NetLinx Device dialog (FIG. 82). Verify the panel's System and Device number values match those values listed within the System folder in the **OnLine Tree** tab of the Workspace window.

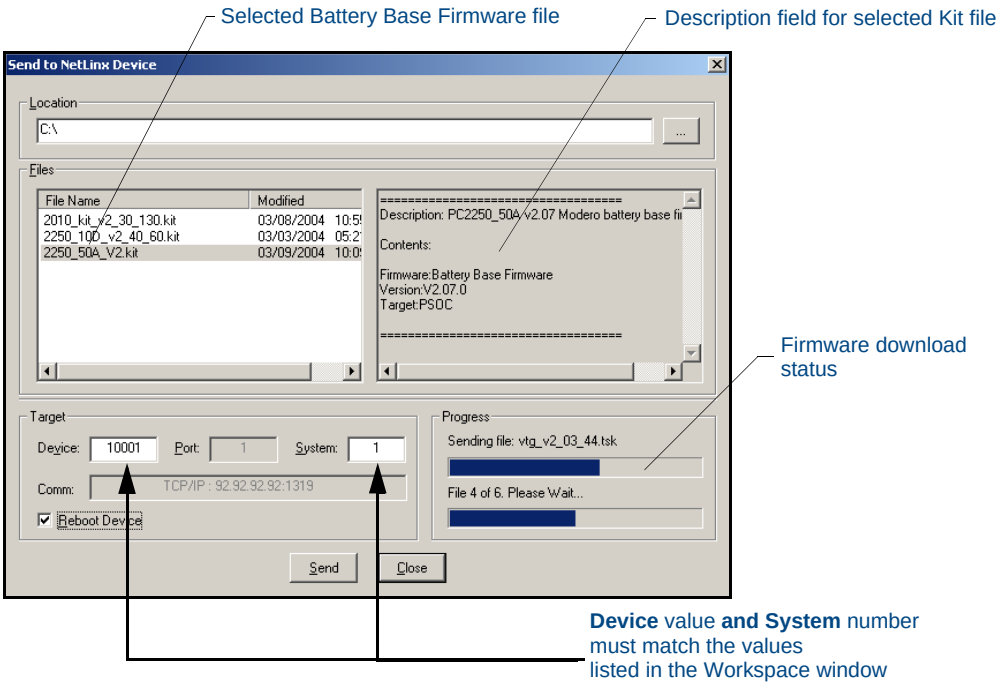


FIG. 82 Send to NetLinx Device dialog (showing NXA-BASE/B firmware update via IP)

7. Select the battery base's Kit file (*ending in VXX.kit*) from the **Files** section (FIG. 82).
8. Enter the **Device** value associated with the panel and the **System** number associated with the Master (*listed in the OnLine Tree tab of the Workspace window*). *The Port field is greyed-out.*

NOTE

The firmware for the battery base can not be downloaded directly. Download of the Kit file to the BASE/B is done through the panel. The procedures for updating firmware to the base are nearly identical to those for updating panel firmware, except that the Kit file selected must be that of the BASE/B.

9. Click the **Reboot Device** checkbox. This causes the touch panel to reboot after the firmware update process is complete. *The reboot of the panel can take up 30 seconds after the firmware process has finished.*
10. Click **Send** to begin the transfer. The file transfer progress is indicated on the bottom-right of the dialog (FIG. 82).
11. Click **Close** on the Send to NetLinx dialog window (*after the panel reboots*) to return to the main program.
12. Right-click the associated System number and select **Refresh System**. This causes a refresh of all project systems, establishes a new connection to the Master, and populates the System list with devices on your particular system.
13. Press and hold the grey Front Setup Access button (below the LCD) for 3 seconds to access the Setup page.
14. Press the **Battery Base** button to open the Battery Base page and confirm that the version is no longer 0.00.

NOTE

If the Base Version field displays 0.00, this means there was an error in the firmware download process. Re-install the base firmware and re-confirm that the new base version no longer reads 0.00.

Firmware Pages and Descriptions

Overview

This section describes each firmware page and their specific functional elements.

Setup Navigation Buttons

These Setup Navigation Buttons (FIG. 83) appear on the left of the panel screen when the Setup page is currently active.

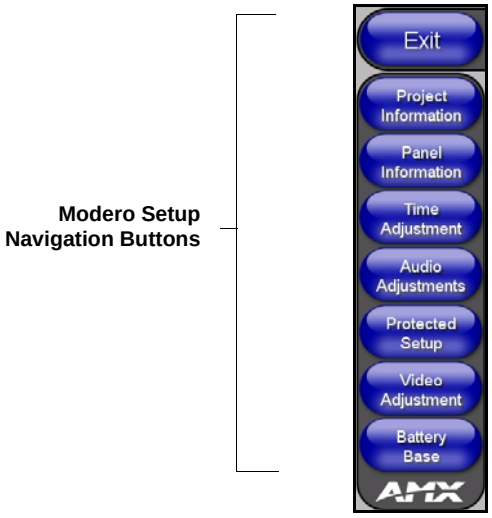


FIG. 83 Setup Navigation Buttons

These Navigation Buttons are specific to these Modero panels and include the specific elements described in the following table:

Setup Navigation Button Elements	
Project Information:	Press the Project Information button to access the Project Information and view the TPD4 project file properties currently loaded on the selected panel ***(read-only).*** • Refer to the *Project Information Page* section on page 87 for more detailed information.
Panel Information:	Press the Panel Information button to access the Panel Information page and view panel specific information such as resolution, memory, etc. ***(read-only).*** • Refer to the *Panel Information Page* section on page 88 for more detailed information.
Time Adjustment:	Press the Time Adjustment button to access the Time Adjustment page where you can alter the time and date settings on the Master. • Refer to the *Time & Date Setup Page* section on page 89 for more detailed information.
Audio Adjustments:	Press the Audio Adjustments button to access the Volume page where you can alter the audio parameters on the Modero panel. • Refer to the *Volume Page* section on page 90 for more detailed information.
Protected Setup:	Press the Protected Setup button to access the Protected Setup page section that provides access to the panel's sensors, calibration features, and connection settings. • Refer to both the *Protected Setup Navigation Buttons* section on page 95 and *Protected Setup Page* section on page 96 for more detailed information.

Setup Navigation Button Elements (Cont.)	
Video Adjustment:	Press the Video Adjustment button to access the Video Adjustment page where you can set the video properties for incoming video. • This button only appears on Color Video (CV) capable touch panels. • Refer to the *Video Adjustment - Video Adjustment Page* section on page 92 for more detailed information.
Battery Base:	Press the Battery Base button to access the Battery Base page where you can modify and monitor NXT-BP Modero Power Pack parameters. • This button only appears when a Modero Table Top panel (NXT) is connected to an NXA-BASE/B battery base. • Refer to the *Battery Base Page* section on page 93 for more detailed information.

Setup Page

This page (FIG. 84) centers around basic Modero panel properties such as: Connection Status of the panel, Display Timeout, Inactivity Page Flip Time, Inactivity page file, and the Panel Brightness.

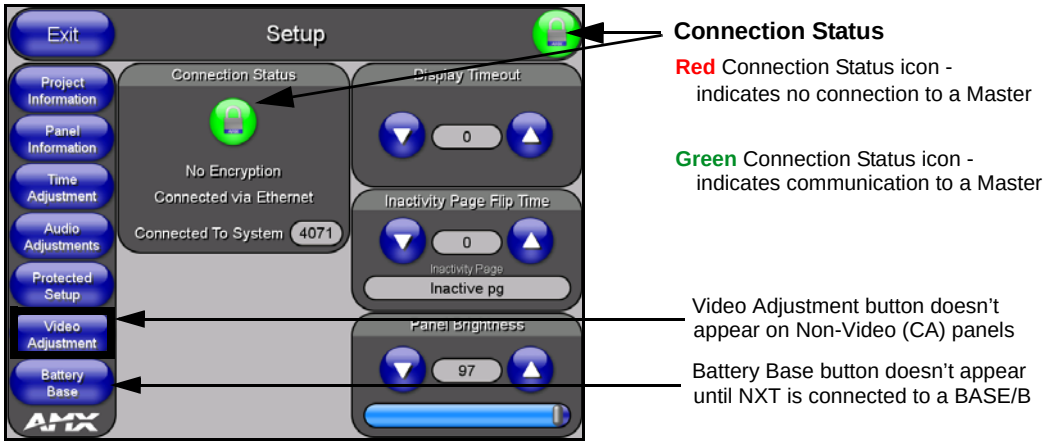


FIG. 84 Setup page

The elements of the Setup page are described in the table below:

Setup Page Elements	
Exit:	Returns you to the Main touch panel page. In this case, the previous page is the default Main page.
Connection Status icon:	This visual display of the connection status allows the user to have a current update of the panel's connection status regardless of what page is currently active. A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).
Connection Status:	Displays whether the panel is communicating externally, the encryption status of the communicating Master, what connection type is being used (*Ethernet or USB*), and what System the panel is a part of. This visual display of the connection status is also reflected at the upper-right of each firmware page. This allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • When a connection is established, the message displayed is either: "*Connected via Ethernet* " or "*Connected via USB* ". • If no connection can be established by the Modero panel, it will continue to try and establish a connection while displaying: "*Attempting via ...*". • The word "*Encrypted*" appears only when an encrypted connection is established with a target Master. • The panel must be rebooted before incorporating any panel communication changes and detecting any active Ethernet connections. ***The Ethernet connection is not detected until after a reboot.***

Setup Page Elements (Cont.)	
Display/Panel Timeout:	Sets the length of time the panel can remain idle before activating the sleep mode. When the device goes into sleep mode, the LCD is powered-down. • Press the UP/DN buttons to increase/decrease the time until the panel times out. Range = 0 - 240 minutes. • Use this button to set the timeout value to zero and disable the sleep mode. • Note: Display timeout values affect battery performance. Small timeout values increase the life of the battery charge. Greater timeout values may require more frequent battery charging.
Inactivity Page Flip Timeout:	Sets the number of minutes of inactivity before the panel automatically flips to a pre-selected touch panel page. When the device goes into this inactivity mode, the LCD does not power-down. • Press the UP/DN buttons to increase/decrease the time the panel can remain inactive before it flips to the preset page. Range = 0 - 240 minutes. • Use this button to set the timeout value to zero and disable the inactivity page flip mode. • The touch panel page used for the Inactivity page flip is shown within a small Inactivity Page field.
Panel Brightness:	Sets the display brightness level of the panel. • Press the UP/DN buttons to adjust the brightness level. Range = 0 - 100. • The on-screen bargraph can be dragged to adjust the Brightness level which is then reflected as a corresponding numeric value within the *Panel Brightness* field.

Project Information Page

The Project Information page displays the TPDesign4 (TPD4) project file properties currently loaded on the selected Modero panel (FIG. 85). Refer to the *TPDesign4 Touch Panel Program* instruction manual for more specific information on uploading TPDesign4 files to a panel.

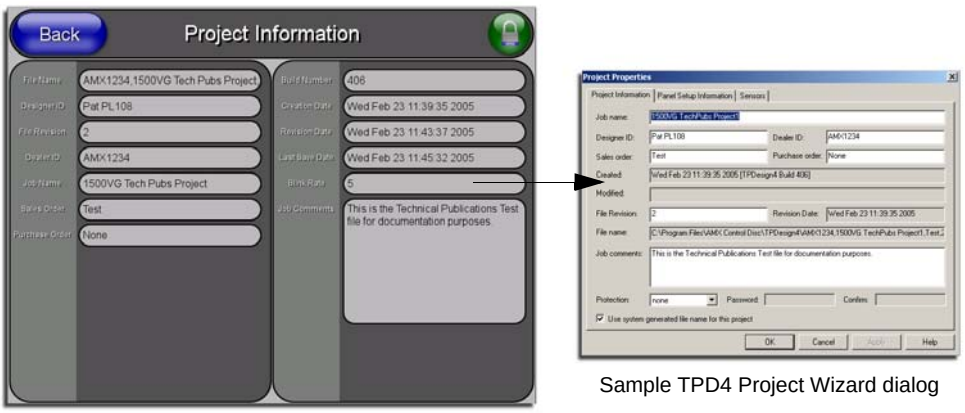


FIG. 85 Project Information page (shown taking information form TPD4 project file)

The elements of the Project Information page are described in the table below:

Project Information Page Elements	
Back:	Returns you to the previously active touch panel page.
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).
File Name:	Displays the name of the TPDesign4 project file downloaded to the panel.
Designer ID:	Displays the designer information.
File Revision:	Displays the revision number of the file.
Dealer ID:	Displays the dealer ID number (*unique to every dealer and entered in TPD4*).

Project Information Page Elements (Cont.)	
Job Name:	Displays the job name.
Sales Order:	Displays the sales order information.
Purchase Order:	Displays the purchase order information.
Build Number:	Displays the build number information of the TPD4 software used to create the project file.
Creation Date:	Displays the project creation date.
Revision Date:	Displays the last revision date for the project.
Last Save Date:	Displays the last date the project was saved.
Blink Rate:	Displays the feedback blink rate (10th of second).
Job Comments:	Displays any comments associated to the job. These comments are taken from the TPD4 project file.

Panel Information Page

The Panel Information page (FIG. 86) centers around Modero panel properties such as: resolution used, on-board memory, firmware, address/channel information, and string information.

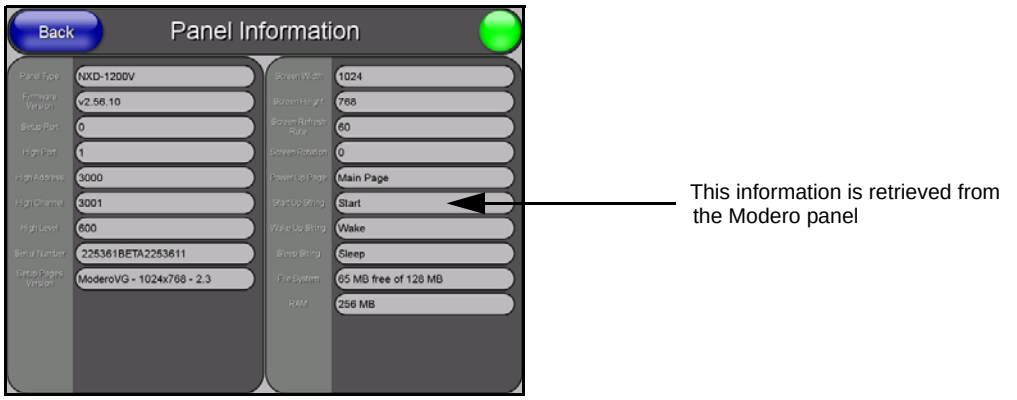


FIG. 86 Panel Information page (takes its' information from the touch panel)

The elements of the Panel Information page are described in the table below:

Panel Information Page Elements	
Back:	Returns you to the previously active touch panel page.
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).
Panel Type:	Displays the model of the Modero panel being used.
Firmware Version:	Displays the G4 firmware version being used by the panel. • Verify you have the latest version from **www.amx.com**.
Setup Port:	Displays the setup port information/value being used by the panel.
High Port:	Displays the high port (port count) value for the panel.
High Address:	Displays the high address (address count) value for the panel.
High Channel:	Displays the high channel (channel count) value for the panel.
High Level:	Displays the high level (level count) value being used by the panel.
Serial Number:	Displays the specific serial number value assigned to the panel.
Setup Pages Version:	Displays the type and version of the Setup pages being used by the panel.
Screen Width:	Displays the pixel width being used to display the incoming video signal on the Modero panel. • Maximum available screen width on 12" panels is 800 pixels.

Panel Information Page Elements (Cont.)	
Screen Height:	Displays the pixel height being used to display the incoming video signal on the Modero panel. • Maximum available screen height on 12" panels is 600 pixels.
Screen Refresh Rate:	Displays the video refresh rate applied to the incoming video signal from the panel.
Screen Rotation:	Displays the degree of rotation applied to the on-screen image.
Power Up Pages:	Displays the first touch panel page assigned for display after the device is powered-up. • This information is taken from the TPD4 project file. • Most projects begin with a Main page.
Start Up String:	Displays the start-up string.
Wake Up String:	Displays the wake up string used after an activation from a timeout.
Sleep String:	Displays the sleep string used during a panel's sleep mode.
File System:	Displays the amount of Compact Flash memory available on the Modero panel.
RAM:	Displays the available RAM (or Extended Memory module) on the Modero panel.

Time & Date Setup Page

The Time & Date Setup page (FIG. 87) allows you to alter/set the time and date information on the NetLinx Master. If either the Time/Date is modified on this page (*then updated to the Master by pressing the Set Time button*), all devices communicating to that target Master will then be updated to reflect the new information.

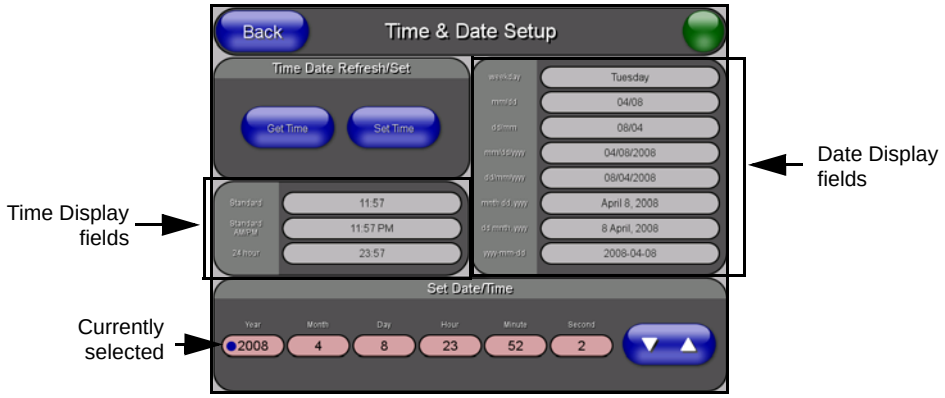


FIG. 87 Time and Date Setup page

NOTE

The only way to modify a panel's time, without altering the Master, is to use NetLinx Code.

The elements of the Time & Date Setup page are described in the table below:

Time & Date Setup Page Elements	
Back:	Returns you to the previously active touch panel page without saving changes (*to save changes, use the Set Time button*).
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).

Time & Date Setup Page Elements (Cont.)	
Time Date Refresh/Set:	This section provides you with two options: • The **Get Time/Date** button retrieves the Time and Date information from the Master. • The **Set Time/Date** button sets the Master to retain and save any time/date modifications made on the Time and Date Setup page.
Time Display fields:	• These fields display the time in three formats: STANDARD, STANDARD AM/PM, and 24 HOUR.
Date Display fields:	• These fields display the calendar date information in several different formats.
Set Date/Time:	This section provides a user with both UP/DN arrow buttons to alter the Master's calendar date and time. The blue circle indicates which field is currently selected. • Select the **Year** field and use the UP/DN buttons to alter the year value (range = 2000 - 2037). • Select the **Month** field and use the UP/DN buttons to alter the month value (range = 1 - 12). • Select the **Day** field and use the UP/DN buttons to alter the day value (range = 1 - 31). • Select the **Hour** field and use the UP/DN buttons to alter the hour value (24-hour military). • Select the **Minute** field and use the UP/DN buttons to alter the minute value (range = 0 - 59). • Select the **Second** field and use the UP/DN buttons to alter the second value (range = 0 - 59).

NOTE

Modero touch panels do not have an on-board clock. This page both receives and sets the time/date of the NetLinx Master.

Volume Page

The Volume page (FIG. 88) (*accessed by pressing the Audio Adjustments button on the Setup page*) allows you to adjust the master volume parameters and default panel sounds on the panel.

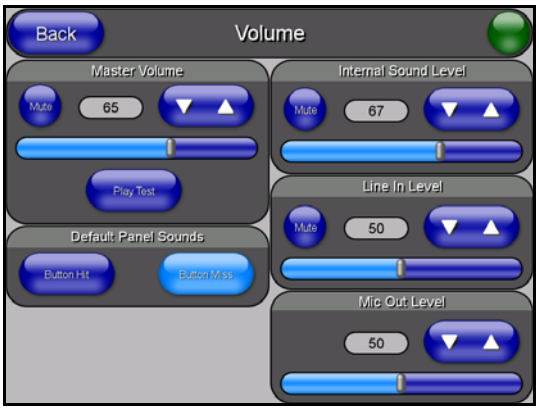


FIG. 88 Volume configuration page

The elements of the Volume page are described in the table below:

Volume Page Elements	
Back:	Saves the changes and returns you to the previously active touch panel page.
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).

Volume Page Elements (Cont.)	
Master Volume:	This section allows you to alter the current master volume level: • Use the UP/DN buttons to adjust the volume level (range = 0 - 100). • The Master Volume bargraph indicates the current volume level. • The **Mute** button toggles the Mute feature. • The **Play Test** button plays a test WAV/MP3 file over the panel's internal speakers.
Default Panel Sounds:	Sets the Modero panel to play either the default **Button Hit** sound (when you touch an active button) and/or the default **Button Miss** sound (when you touch a non-active button or any area outside of the active button).
Internal Sound Level:	This section allows you to adjust the current sound level on the internal panel speaker: • Use the UP/DN buttons to adjust the volume output on the internal speakers (range = 0 - 100). • The Internal Sound Level bargraph indicates the current sound level. • The **Mute** button mutes the volume.
Line In Level:	Allows you to adjust the current Line-In volume level (being received from the communicating breakout box). • Use the UP/DN buttons to adjust the Line-In volume level (range = 0 - 100). • The Line-In Level bargraph indicates the current Line-In level. • The **Mute** button mutes the Line-In volume.
Mic Out Level:	Allows you to adjust the current Microphone volume level (being received from the communicating breakout box). • Use the UP/DN buttons to adjust the Microphone volume level (range = 0 - 100). • The Mic Out Level bargraph indicates the current Mic Out level.

Supported sampling rates for WAV

The following is a listing of supported sampling rates associated for WAV files played on these panels. Some WAV files currently played on Modero's may not work on these panels. The supported sampling rates for WAV files are:

Supported WAV Sampling Rates	
• 48000 Hz	• 16000 Hz
• 44100 Hz	• 12000 Hz
• 32000 Hz	• 11025 Hz
• 24000 Hz	• 8000 Hz
• 22050 Hz	

Protected Setup Page

This button opens the Protected Setup page which centers around the properties used by the panel to properly communicate with the NetLinx Master. Refer to both the *Protected Setup Navigation Buttons* section on page 95 and the *Protected Setup Page* section on page 96 for more detailed information.

Video Adjustment Slide-Out Option Bar

Pressing the on-screen Video Adjustment button causes an option bar to slide outwards from the Navigation buttons (FIG. 89). This option bar within a 1200V panel provides you with one choice: Video Adjustment. The other two options (RGB Adjustment and Streaming Adjustment) are only available on a VG-Series panel and are greyed-out (inaccessible). *Each of these options corresponds to an on-board slot position where the related components reside (as seen below).* As an example: Composite video is available via slot 1 because of the location of associated components. Since these components are shared between the 1200V-Series and VG-Series panels, it is an option common to both. Refer to the following section for detailed information on this option.

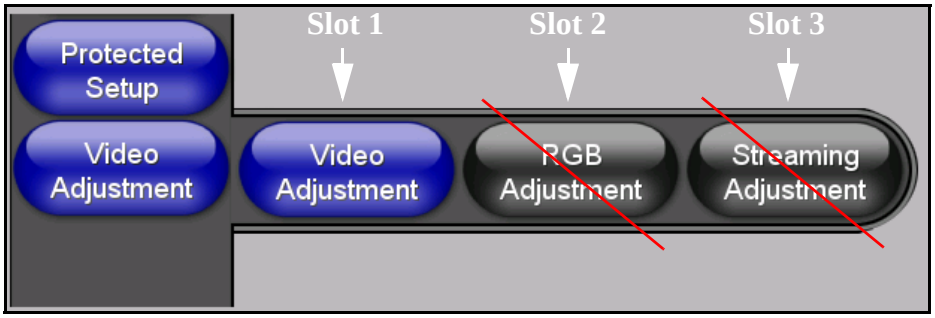


FIG. 89 Video Adjustment Slide-Out Options Bar

Video Adjustment - Video Adjustment Page

The Video Adjustment page (FIG. 90) (*accessed by pressing the Video Adjustment button on the Setup page and then selecting the appropriate button from the option bar*) sets the Video properties of the incoming video signal from an NXA-AVB/RGB Breakout Box.

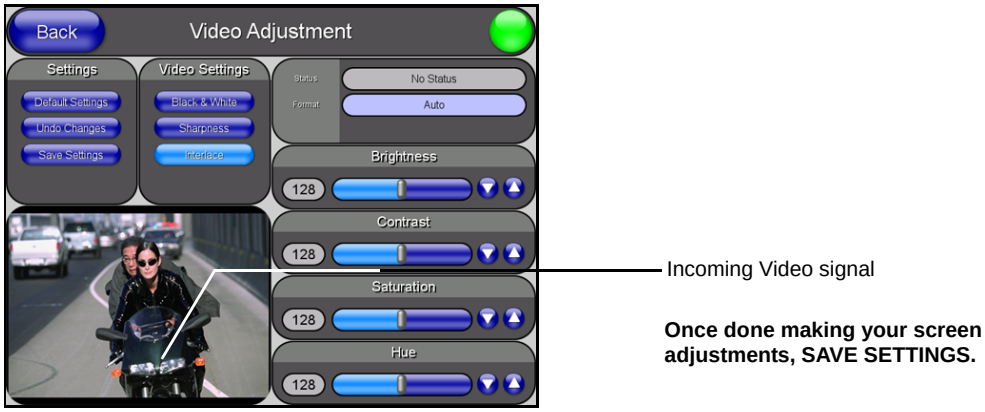


FIG. 90 Video Adjustment page (showing default values)

The elements of the Video Adjustment page are described in the table below:

Video Adjustment Page Elements	
Back:	Saves the changes and returns you to the previously active touch panel page.
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).
Settings:	• The **Default Settings** button sets the video settings to their default values (indicated in this table). • The **Undo Changes** button disregards any changes made on the page since the last settings were saved. • The **Save Settings** button saves any changes made to this page.
Video Settings:	• The **Black & White** button toggles the Black & White display mode. Default = Off. • The **Sharpness** button toggles the Interpolate (Sharpness) feature. Default = On. • The **Interlace** button toggles the Interlacing feature. Default = On.
Status:	Displays whether or not a video-sync signal is detected.
Format:	Allows you to press this blue field and cycle through a choice of available video formats (**NTSC**, **PAL**, **SECAM**, or **Auto detect**). • Default = Auto.

Video Adjustment Page Elements (Cont.)	
Brightness:	Use the UP/DN buttons to alter the brightness level of the incoming signal. • Range = 0 - 255, default = 128.
Contrast:	Use the UP/DN buttons to alter the contrast level of the incoming signal. • Range = 0 - 255, default = 128.
Saturation:	Use the UP/DN buttons to alter the color saturation level of the incoming signal. • Range = 0 - 255, default = 128.
Hue:	Use the UP/DN buttons to alter the hue level of the incoming signal. • Range = 0 - 255, default = 128.

Battery Base Page

This page (FIG. 91) allows you to alter/set the power warning preferences, monitor battery status information, and alter the display times for the battery warnings. The fields on this page are populated with information after the panel is connected to an optional NXA-BASE/B Battery Base containing up to two NXT-BP batteries.

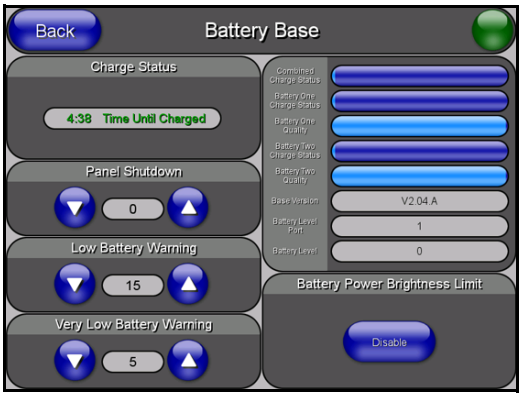


FIG. 91 Battery Base page

This page is ONLY available on Modero Table Top panels (NXT) using an NXA-BASE/B. The elements of the Battery Base page are described in the table below:

Battery Base Page Elements	
Back:	Saves the changes and returns you to the previously active touch panel page.
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).
Charge Status:	**Time Remaining** (**blue**) indicates the amount of charge time (use) remaining on the batteries within the connected NXA-BASE/B. **Time Until Charged** (**green**) indicates the amount of time remaining until the batteries installed within the connected NXA-BASE/B are fully charged. • Range = 0:00 - 12:59. This is read in HH:MM, hours and minutes.
Panel Shutdown:	The **Panel Shutdown** UP/DN buttons alter the timeout value (in minutes). • This value determines the number of minutes that would need to pass before the panel automatically shuts-down. • Once shutdown, the unit would have to be restarted. A zero value disables this feature. Range = 0 - 240, default = 0 min.
Low Battery Warning:	The **Low Battery Warning** UP/DN buttons alter the time value (in minutes) available on the battery (for use) before the panel displays a low battery warning. • Range - 10 - 45, default = 15 min.

Battery Base Page Elements (Cont.)	
Very Low Battery Warning:	The **Very Low Battery Warning** UP/DN buttons alter the time value (in minutes) available on the battery (for use) before the panel displays a very low battery warning. This indicates a near-term panel shutdown. Range = 3 - 15, default = 5 min. - *This value can never exceed the Low Battery Warning value.* • **When the NXT-BP batteries (installed within the NXA-BASE/B battery base) reach a point where they need to be recalibrated.** - A recalibration pop-up screen appears to ask whether or not you choose to recalibrate the batteries at this time.
Battery Status fields:	This section provides the ability to monitor the current battery charge levels and charge qualities: • The **Combined Charge Status** bargraph indicates the combined power charge available from both internal battery connection slots (bargraph range = 0 - 100). • The **Battery One Charge Status** bargraph indicates the power charge available on the Slot 1 internal battery connection (bargraph range = 0 - 100). • The **Battery One Quality** bargraph indicates the physical capacity (quality) of the battery. Quality is the percentage of actual capacity vs. its rated capacity. ***For optimal performance, a battery should be replaced when the quality rating drops below 80%.*** • The **Battery Two Charge Status** bargraph indicates the power charge available on the Slot 2 internal battery connection (range = 0 - 100). • The **Battery Two Quality** bargraph indicates the physical capacity (quality) of the battery. Quality is the percentage of actual capacity vs. its rated capacity. • The **Base Version** field indicates the firmware version being used by the NXA-BASE/B Battery Base connected to the NXT Modero panel. • The **Battery Level Port** field indicates the port being used to report the combined charge status level back to the NetLinx Master on (set in TPD4). • The **Battery Level** field indicates the level being used to report the combined charge status level back to the NetLinx Master on (set in TPD4).
Battery Power Brightness Limit:	The DISABLE/DISABLED button acts as a power save feature with two available choices: • **Disable** - activates the brightness limit set on the Modero panel and is used to conserve battery power. Activating this feature causes the panel to function at 80% of full brightness and overrides the Panel Brightness value set on the Setup page. *This extends the battery usage time.* • **Disabled** - (*illuminated when selected*) deactivates this power save feature and makes the panel use the specified Panel Brightness level set on the Setup page.

The term "quality" (in the context of a battery), refers to the current capacity relative to the batteries' rated capacity. For example, after constant use, a battery may be operating at 75% of its rated capacity even though it might be fully charged. In this case, the battery could be incorrectly reporting its' information back to the battery base and then consequently relating this information back to the Battery Base page. A battery can be recalibrated using an optional NXT-CHG (battery charger).

Protected Setup Navigation Buttons

The Protected Setup Navigation Buttons (FIG. 92) appear on the left of the panel screen when the Protected Setup page is currently active.

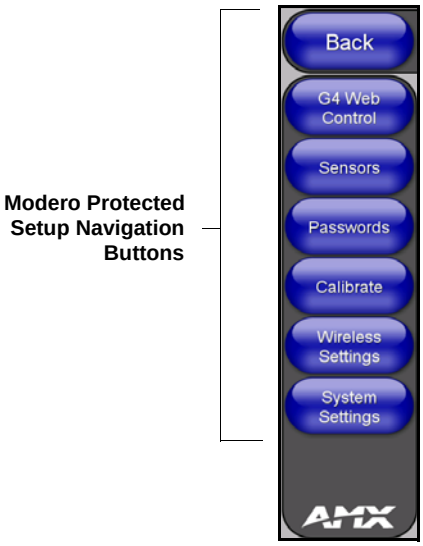


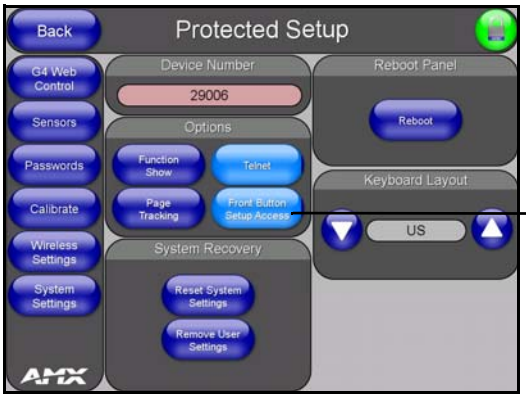
FIG. 92 Protected Setup Navigation Buttons

These Navigation Buttons are specific to these Modero panels and include the panel specific elements described in the following table:

Protected Setup Navigation Button Elements	
G4 Web Control:	Press the G4 Web Control button to access the G4 Web Control page where you can enable or disable display and control of your panel (via the web) by a PC running a VNC client. • Refer to the *Using G4 Web Control to Interact with a G4 Panel* section on page 68 for more detailed information.
Sensors:	Press the Sensors button to access the Sensors Setup page where you can modify/monitor both the light and motion sensor settings. • Refer to the *Sensor Setup Page* section on page 99 for more detailed information.
Passwords:	Press the Passwords button to access the Passwords Setup page where you can specify up to five security passwords. *Default password is 1988.* • Refer to the *Password Setup Page* section on page 102 for more detailed information.
Calibrate:	Press the Calibrate button to access the Calibration page where you can use the displayed set of crosshairs to calibrate a touch panel. • Refer to the *Calibration Page* section on page 102 for more detailed information.
Wireless Settings:	Press the Wireless Settings button to access the Wireless Settings page where you can setup the wireless connection parameters used by the NXA-PCI80211G wireless card located within the Modero panel. • Refer to the *Wireless Settings Page* section on page 103 for more detailed information.
System Settings:	Press the System Settings button to access the System Settings page where you can alter the communication parameters of both the NetLinx Master and Modero panel. • Refer to the *System Settings Page* section on page 107 for more detailed information.

Protected Setup Page

The Protected Setup page (FIG. 93) centers around the properties used by the panel to properly communicate with the NetLinx Master. Enter the factory default password (***1988)*** into the password keypad to access this page.



Provides access to the panel firmware pages by enabling the grey front setup access button:
- Setup page (after a **3 second** press/hold)
- Calibration page (after a **6 second** press/hold)

FIG. 93 Protected Setup page-showing default values

The elements of the Protected Setup page are described in the table below:

Protected Setup Page Elements	
Back:	Saves the changes and returns you to the previously active touch panel page.
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).
Device Number:	Opens a keypad that is used to set and display the current device number.
Options:	Allows you to select various touch panel features: • The **Function Show** button enables the display of the channel port and channel code in the top left corner of the button, the level port and level code in the bottom left corner, and the address port and address code in the bottom right corner (see FIG. 95 for an example of the function locations). • Use the **Page Tracking** button to toggle page tracking. When enabled, the touch panel sends page data back to the NetLinx Master, or vice versa depending on the touch panel settings. • Use the **Telnet** button to enable or disable the telnet server on the panel. This feature focuses on direct telnet communication to the panel. • Use the **Front Button Setup Access** button to activate the grey Front Setup Access button (located below the LCD) to access the firmware pages. - Default condition is On. - Press and hold this grey button for **3 seconds** to access the Setup page. - Press and hold this grey button for **6 seconds** to access the Calibration page.
Reboot Panel:	Pressing this button causes the panel to restart after saving any changes.

Protected Setup Page Elements (Cont.)	
System Recovery:	Allows you to either reset the touch panel to factory default settings and/or wipe out all existing touch panel pages: • The **Reset System Settings** button allows a user to wipe out all current configuration parameters on the touch panel (such as IP Addresses, Device Number assignments, Passwords, and other presets). - Pressing this button launches a Confirmation dialog (FIG. 94) which asks you to confirm your selection. - This dialog is configured with a delay timer that does not enable the YES button for 5 seconds. This delay provides an additional amount of time for the user to confirm their decision. • The **Remove User Pages** button allows you remove all current TPD4 touch panel pages currently on the panel (*including the pre-installed AMX Demo pages*). - Pressing this button launches a Confirmation dialog (FIG. 94) which asks you to confirm your selection. - This dialog is configured with a delay timer that does not enable the YES button for 5 seconds. This delay provides an additional amount of time for the user to confirm their decision.
Keyboard Layout: *(build 2.60 or higher)*	Displays the listing of supported international keyboard settings. The following list allows the end-user to specify which international keyboard is being connected to the Modero touch panel and then which characters should be reflected within the G4 Computer Control and TakeNote applications: **- None** *(default)***, Spanish, Italian, French, German, Swiss, UK,** and **US** ***Note: You must be using a standard 101 button keyboard to accurately utilize this feature.*** • Modero uses the open-source VNC character standards to transmit the character information to a target device such as a PC. • One of the issues which occurred in the past was that some 101-key foreign keyboard character sets were being incorrectly represented via the Computer Control and Take Note applications. • For example: Spanish keyboards consisting of Castilian character sets such as tilde (é) were being miscommunicated by the VNC application to the source computer and as a result, passwords were not properly being entered. • The VNC - Computer Control keyboard drivers found in earlier Modero firmware (**build 57 or earlier**) were using an English type/character set which was not fully utilizing all available foreign characters. • Several different countries have produced 101-key international keyboards, each with their own unique set of keys occupying the keyboard. Several of these keys are specific to the language they are used with.

FIG. 94 Protected Setup page-System Recovery confirmation dialog

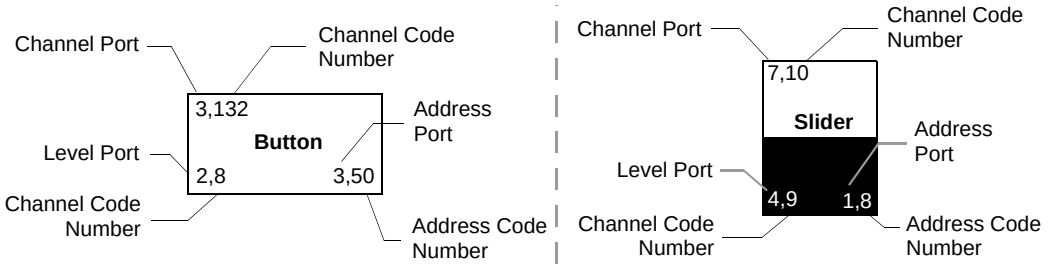


FIG. 95 Button/slider Function Show example

G4 Web Control Page

The G4 Web Control page (FIG. 96) centers around enabling and disabling both the display and control of your panel (via the web). An external PC running a VNC client (*installed during the initial communication to the G4 panel*) makes this possible.

FIG. 96 G4 Web Control page

Each panel supports the open standard Virtual Network Computing (VNC) interface. These panels contain a VNC server that allows them to accept a connection from any other device running a VNC client. Once a connection is established to that target device, the client can control the touch panel remotely. The elements of the G4 Web Control page are described in the table below:

G4 Web Control Page Elements	
Back:	Saves the changes and returns you to the previously active touch panel page.
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).
G4 Web Control Settings:	Sets the IP communication values for the touch panel and contains:
Enable/Enabled	• The Enable/Enabled button allows you to toggle between the two G4 activation settings: - **Enable** - deactivates the G4 Web Control feature on the panel. - **Enabled** - activates the G4 Web Control feature on the panel and allows an external PC running a VNC client to access the panel (*after the remaining fields are configured*).
Network Interface Select	Displays the detected method of communication to the web: • **Wired** is used when a direct Ethernet connection is being used for communication to the web. *This is a default setting if no wireless interface card is detected by the panel.* • **Wireless** is used when a wireless card is detected within the internal card slot. This method provides an indirect communication to the web via a pre-configured Wireless Access Point.

G4 Web Control Page Elements (Cont.)	
Web Control Name	Allows you to enter a unique alpha-numeric string that is used as the display name of the panel within the Manage WebControl Connections window of the new NetLinx Security browser window. • This Web Control tab displays a G4 icon alongside the link to the Web Control Name given to this panel (FIG. 97).
Web Control Password	Allows you to enter the G4 Authentication session password associated for VNC web access of this panel.
Web Control Port	Allows you to enter the port value that the VNC Web Server runs on. • Default value is 5900.
Maximum Number of Connections	This read-only field displays the maximum number of users that can be simultaneously connected to the target panel via the web. • Default value is 1.
Current Connection Count	This read-only field displays the current number of users connected to the target panel via the web. *This value cannot exceed the Maximum number field.*
G4 Web Control Timeout:	Sets the length of time (in minutes) the panel can remain idle (no cursor movements) before the session is closed and the user is disconnected. • Minimum value = 0 minutes (panel never times-out) • Maximum value = 240 minutes (panel times-out after 240 minutes/4hours)

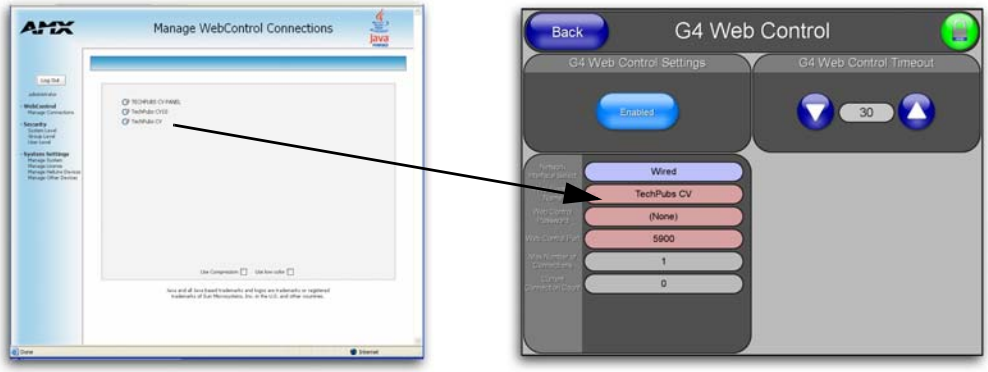


FIG. 97 Sample relationship between G4 Web Control and Mange WebControl Connections window

Refer to the *Using G4 Web Control to Interact with a G4 Panel* section on page 68 for more detailed instructions on how to use the G4 Web Control page with the new web-based NetLinx Security application.

Sensor Setup Page

The Sensor Setup page (FIG. 98) allows you to adjust the Light and Motion Sensor parameters on a Modero touch panel.

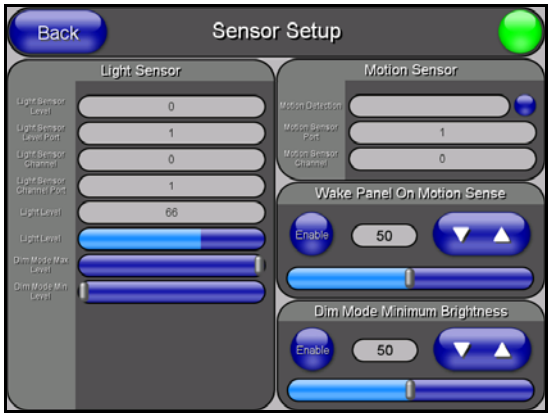


FIG. 98 Sensor Setup page

A light level value between the Minimum and Maximum DIM Mode values delivers an average light level. The DIM mode Min Level can never exceed the DIM Mode Max Level.

The elements of the Sensor Setup page are described in the table below:

Sensor Setup Page Elements	
Back:	Saves the changes and returns you to the previously active touch panel page.
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).
Light Sensor:	Allows you to monitor and alter the sensitivity of the Modero panel light sensor: • The **Light Sensor Level** field indicates the level used to report the light sensor level back to the NetLinx Master (set in TPD4) ***(read-only).*** • The **Light Sensor Level Port** field indicates the port used to report the light sensor level back to the NetLinx Master (set in TPD4) ***(read-only).*** • The **Light Sensor Channel** field indicates the level used to report the sensor channel back to the NetLinx Master (set in TPD4). It is On when you are below the Maximum dim mode level ***(read-only)***. • The **Light Sensor Channel Port** field indicates the port used to report the sensor channel back to the NetLinx Master (set in TPD4) ***(read-only).*** • The **Light Level** field provides a numeric value representing the current value of the light level detected by the on-board photo-sensor. • The Light Level bargraph displays a horizontal bargraph indicating the current value of the light level detected by the on-board photo-sensor. This bargraph provides a visual representation of the numeric value displayed within the **Light Level** field. • Use the **Dim Mode Max Level** bargraph to alter the Maximum DIM level value used to activate the DIM Mode Brightness Level (range = 0 - 100). • Use the **Dim Mode Min Level** bargraph to alter the Minimum DIM level value used to activate the DIM Mode Brightness Level (range = 0 - 100). - The position of this bargraph can never exceed that of the Dim Mode Max Level.
Motion Sensor:	Provides the following fields: • The **Motion Detection** field displays a reactive button that changes color (illuminates) and displays the words "Motion Detected" when motion is detected by the Modero panel's front motion sensor. • The **Motion Sensor Port** field indicates the port used to report the motion sensor channel back to the NetLinx Master (set in TPD4) ***(read-only).*** • The **Motion Sensor Channel** field indicates the channel used to report the motion sensor channel back to the NetLinx Master (set in TPD4) ***(read-only).***
Wake Panel On Motion Sense:	The Wake Panel Sensitivity relates to the sensitivity of the motion sensor to detect motion and wake the panel accordingly. • Toggle the **Enable/Enabled** button to either active/inactive this feature: - **Enable** - activates this feature. Activating this feature reactivates the panel from a panel timeout (sleep) mode. - **Enabled** - (*illuminated when selected*) deactivates this feature and makes the panel use the specified Display Timeout value set on the Setup Page. • Use the **Wake Panel** UP/DN buttons to alter the sensitivity value. - Range = 0 - 100. • The horizontal WAKE PANEL SENSITIVITY bargraph indicates the current motion sensitivity value associated with waking the panel from a timeout.

Dim Mode Minimum Brightness:	Allows you to alter the sensitivity of the Modero panel light sensor: • Toggle the **Enable**/**Enabled** button to either active/inactive the DIM Mode feature: - **Enable** - activates this feature. Once active (by receiving a value below the Dim Mode Min Level value), the current light level ramps to the DIM Mode value within a few seconds. - **Enabled** - (*illuminated when selected*) deactivates this feature. • Use the **DIM Mode Brightness** UP/DN buttons to alter the DIM level. - Range = 0 - 100. - The lower the value, the darker a room must be before the LCD Brightness value changes to conform to a DIM room (and vice versa with a higher value). • The **DIM Mode Minimum Brightness** bargraph indicates the current DIM Mode Brightness level. - This level corresponds to the brightness level of the LCD used when the DIM Mode is active. - The Brightness value of the panel in a DIM room (low-light) is much less than that of a Non-DIM (well to brightly-lit) where the LCD Brightness must be higher to display the screen content clearly.

NOTE

There is a relationship between the motion sensor and the panel sleep feature. If a panel is set to Sleep Mode, there is a time delay before the motion sensor is activated to detect motion. By creating a time delay to the detection, this allows a user to set the sleep mode and leave the panels' detection range. In this way, the panel doesn't awake immediately after the sleep is active and you move away.

Using the Automated Brightness Control feature (DIM Mode)

Please follow the steps below to set up Automated Brightness Control:

1. Set the lighting conditions in the room to maximum (turn On all the lights).
2. Set the Maximum Panel Brightness, from the Setup page, to a comfortable level.

NOTE

Sitting in front of the panel, you should be able to comfortably see someone sitting behind the panel without being "blinded" by the panel.

3. Open the Sensors Setup page (FIG. 98 on page 99) from the Protected Setup menu section.
4. Move around the panel and block the direct or indirect light from the room fixtures with your body. Take note of the drop in the lighting level being detected by the panel in response to your movements.
5. Set the Maximum brightness of the Dimmer (*Dim Mode Max Level*) below the detected drop. This will make sure that the panel does not react to variations in the lighting conditions of a normal working environment.

NOTE

The maximum (upper level) of the dimmer should be at least 15% lower than the maximum detected level.

6. Set the minimum lighting conditions in the room (not complete darkness but the minimal lighting setup, unless complete darkness is an "operational option" for the room).
7. Set the Minimum Dimmer Brightness (*Dim Mode Min Level*) to a comfortable level by sitting in front of the panel. You should be able to comfortably see someone sitting behind the panel without being "blinded" by the panel.
8. Move around the panel and block the direct or indirect light from the room fixtures with your body. Take note of the drop in the lighting level being detected by the panel in response to your movements.
9. Set the Minimum brightness of the Dimmer (*Dim Mode Max Level*) below the detected drop. This will make sure that the panel does not react to variations in the lighting conditions of a normal working environment.

NOTE

The minimum (lower level) of the dimmer should be at least 10% lower than the minimum detected level (ex: lower dimmer level at 30% if the detected lighting of the room is at 40%).

Password Setup Page

The Password Setup page (FIG. 99) centers around the properties used to assign passwords for the Modero panel pages.

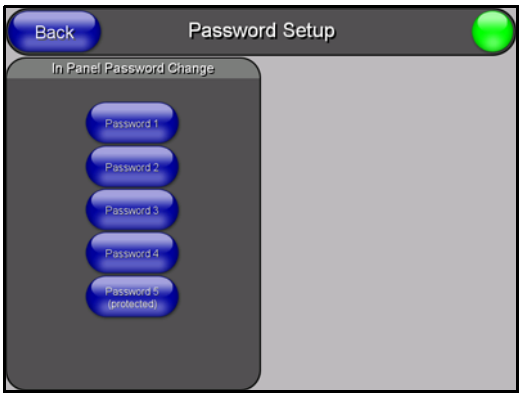


FIG. 99 Password Setup page

The elements of the Password Setup page are described in the table below:

Password Setup Page Elements	
Back:	Saves the changes and returns you to the previously active touch panel page.
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).
In Panel Password Change:	Accesses the alphanumeric values associated to particular password sets. • PASSWORD 1, 2, 3, 4, 5 (protected) buttons open a keyboard where you can enter alphanumeric values associated to a selected password group. • Clearing Password #5 removes the need to enter a password before accessing the Protected Setup page.

Calibration Page

This page (FIG. 100) allows you to calibrate the input touch device (touch panel) using the pre-selected touch driver.

- Press and hold the grey Front Setup Access button (below the Modero LCD) for 6 seconds to access the Calibration page.
- **Press the crosshairs to calibrate the panel and return to the last active firmware page.**

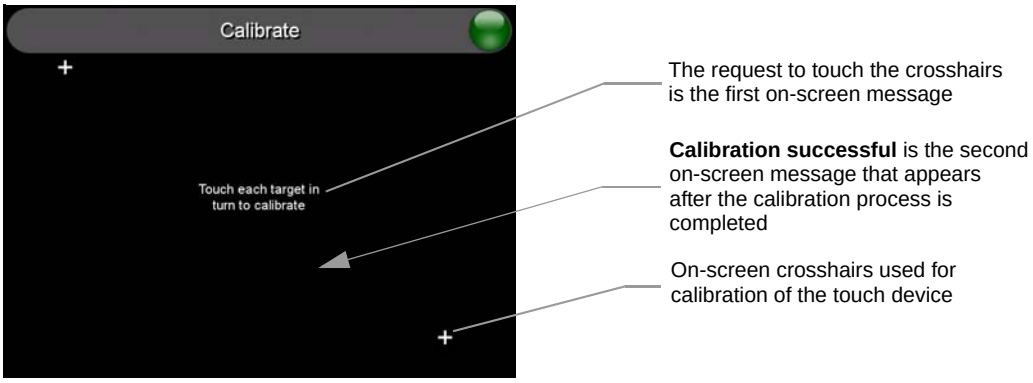

Calibrate
Touch each target in turn to calibrate
The request to touch the crosshairs is the first on-screen message
Calibration successful is the second on-screen message that appears after the calibration process is completed
On-screen crosshairs used for calibration of the touch device

FIG. 100 Calibration page (actually 3 separate screens)

NOTE

If the calibration was improperly set and you cannot return to the Calibration page (through the panel's firmware); *you can access this firmware page via G4 WebControl where you can navigate to the Protected Setup page and press the Calibrate button through your VNC window.*
This action causes the panel to go to the Calibration page seen above, where you can physically recalibrate the actual touch panel again using the above procedures.

Wireless Settings Page

The Wireless Settings page (FIG. 101) sets the communication information for the installed wireless interface card. This information includes its corresponding IP communication parameters, wireless communication settings, and read the device number assigned to the Modero panel. These panels can use the NXA-PCI80211G wireless card for wireless communication. This card also supports *Wired Encryption Protocol* (WEP) encryption of 64-bit and 128-bit key lengths. Refer to both the *Wireless Settings Page - Wireless Access Overview* section on page 54 and *Configuring a Wireless Connection* section on page 55 for more detailed information of setting up the Modero panel for wireless network access.

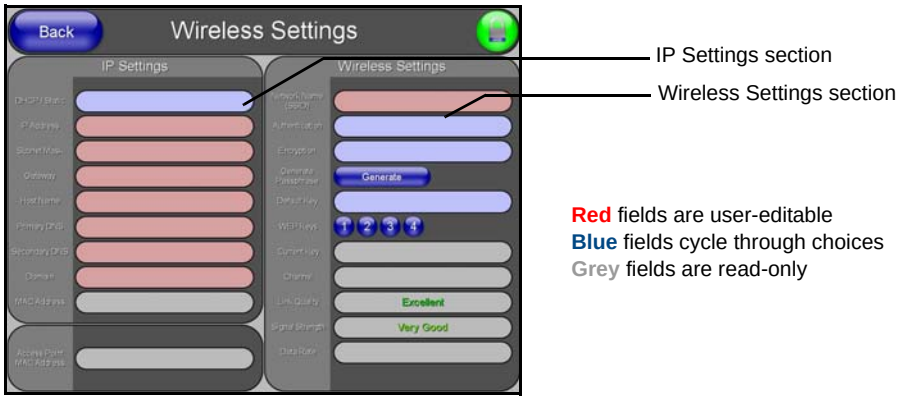


FIG. 101 Wireless Settings page (showing default values)

The elements of the Wireless Settings page are described in the table below:

Wireless Settings Page Elements	
Back:	Saves the changes and returns you to the previously active touch panel page.
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).
IP Settings:	Sets the IP communication values for the touch panel and contains:
DHCP/STATIC	Sets the panel to either DHCP or Static communication modes. • *DHCP (Dynamic Host Configuration Protocol)* assigns IP Addresses to client stations logging onto a TCP/IP network from a DHCP server. • *Static IP* is a permanent IP Address that is assigned to a node in a TCP/IP network. **Note:** If DHCP is selected, the following fields become read-only: IP Address, Subnet Mask, Gateway, Primary DNS, Secondary DNS, and Domain.
IP Address	Sets the secondary IP Address assigned to the panel.
Subnet Mask	Sets a subnetwork address to the panel. • *Subnetwork mask* is the technique used by the IP protocol to filter messages into a particular network segment (subnet).

Wireless Settings Page Elements (Cont.)	
IP Settings (Cont.):	
Gateway	Sets a gateway value to the panel. • *Gateway* is a computer that either performs protocol conversion between different types of networks/applications or acts as a go-between for two or more networks that use the same protocols.
Host Name	Sets the host name of the panel. • PRIMARY DNS sets the address of the primary DNS server being used by the Modero panel for host name lookups. - *DNS (Domain Name System)* is software that lets users locate computers on a local network or the Internet (TCP/IP network) by host and domain. The DNS server maintains a database of host names for its' domain and their corresponding IP Addresses. • SECONDARY DNS sets the secondary DNS value to the panel.
Primary DNS	Sets the address of the primary DNS server used by the panel for host name lookups.
Secondary DNS	Sets the secondary DNS value to the Modero panel.
Domain	Sets the unique name on the Internet to the panel for DNS look-up.
MAC Address	This value is factory set by the manufacturer of the wireless mini-PCI Ethernet card.
Access Point MAC Address:	This value is factory set by the manufacturer of the Wireless Access Point (WAP). • When communicating with a WAP200G enter the MAC Address (**BSSID**) of the target WAP as the Access Point MAC Address. Refer to the ***WAP200G*** *Instruction Manual* for more detailed information on the interaction between these two product lines.
Wireless Settings:	Sets the communication values for the NXA-PCI80211G mini-PCI wireless communication card installed within the Modero panel.
Network Name (SSID)	Provides the Service Set Identifier (SSID), required by the panel, before it is permitted to join the wireless network. The SSID is the unique name used on the WAP and assigned to all panels in a wireless network that are communicating to the same target WAP. • It is case sensitive and must not exceed 32 characters, which may be any keyboard character. Make sure this setting is the same for all points in your wireless network. • This unique string identifies the network and is the same string for all users on the same network.
Authentication	Toggles between the two authentication modes: *Open System* or *Shared Key*: • An *Open system* network allows connections from any client without authenticating whether that client has permission to associate with the network. • A *Shared key network* requires the client to submit a key which is shared by the network Wireless Access Point before it is given permission to associate with the network. ***In this case the key is the same as the WEP encryption key***. • In both cases, even after association has taken place, if WEP encryption has also been enabled then the client will still require the WEP key to encrypt and decrypt packets in order to communicate successfully with the network.

Wireless Settings Page Elements (Cont.)	
Wireless Settings (Cont.):	
Encryption	Cycles through the available encryption options: *Clear Text, WEP64, and WEP128*. Wired Equivalent Privacy is an 802.11 security protocol for wireless networks. The WEP encryption method is designed to provide the "equivalent" security available in wireline networks. • **Clear Text** causes network packets to be sent out as unencrypted text. • **WEP64** enables WEP encryption at 64-bits. In this case all packets will be transmitted with their contents encrypted using the Default WEP Key. • **WEP128** enables WEP encryption at 128-bits. All packets are transmitted with their contents encrypted using the Default WEP Key. • If the key is not the correct size, the system will resize it to match the number of bits required for the WEP encryption mode selected.
Generate (Passphrase)	Pressing the **Generate** button displays an on-screen keyboard which allows you to enter a passphrase and then AUTOMATICALLY generate all four WEP keys which are compatible only among Modero panels. ***Note:*** *The code key generator on Modero panels use the same key generation formula. Therefore, this same Passphrase generates identical keys when done on any Modero because they all use the same Modero-specific generator. The Passphrase generator is case sensitive.* • Take these WEP keys and enter them into the target WAP. When also working with multiple panels, these WEP Keys (*identical across all Modero panels*) must be entered manually into the target WAP. • Once all panels have been setup in this way, these WEP keys can then be entered into the associated Wireless Access Point for ease of installation. • The Passphrase generator is unique to Modero panels. The Key generator on these Modero panels are specific and do not generate the same keys as other external non-AMX wireless devices. - Example: If you enter the word **apple** into the Passphrase generator on a 3rd-party Wireless Access Point, it comes back with 1a:2b:3c:4d:etc. Entering the same **apple** in the Passphrase generator of any Modero panel generates a different key: a1:b2:c3:d4:etc. Only AMX Modero panels generate **the same** Current Key by using a unique Passphrase key generation technology. A Current Key string, when generated anywhere else, will not match those created on the Modero panels. ***Note:*** *The code key generator on Modero panels use the same key generation formula.The passphrase generator is case sensitive.*
Default Key	Cycles through the four available WEP key identifiers in order to select a WEP key to use. *As the Default Key value is altered (through selection) the corresponding Current Key is displayed. Each of these corresponds to a WEP key.* • This feature is useful for accessing different networks without having to re-enter that networks' WEP key. • It is also sometimes used to set up a rotating key schedule to provide an extra layer of security.

Wireless Settings Page Elements (Cont.)	
Wireless Settings (Cont.):	
WEP Keys	This feature provides you with another level of security by selecting a Key value. • A single button is available for each WEP key up to a maximum of four keys. • Pushing any of these buttons brings up an on-screen keyboard. Keys should be entered in hexadecimal notation. It is common practice for every two characters (representing a single byte) to be separated by a colon. • Press **Done** to accept any changes and save the new value. • **Ex: 01:0A:67:F3:56**, although this is not necessary and the key may be entered by omitting the colons. A 64-bit key will be 10 characters in length while a 128-bit key will be 26 characters in length. The length of the key entered determines the level of WEP encryption employed. Either 64-bit or 128-bit. • 128-bit keys may also be entered and are used if supported by the internal wireless card.
Current Key	Displays the current WEP key in use. Keys may also be examined by touching the key buttons and noting the keyboard initialization text. • When working with a single panel and a single WAP, it is recommended that you manually enter the Current Key from the WAP into the selected WEP Key. • When working with a single WAP and multiple panels, it is recommended that you generate a Current Key using the same passphrase on all panels and then enter the panel-produced WEP key manually into the Wireless Access Point.
Channel	The RF channel being used for connection to the WAP (***read -only***). • This is determined through the WAP.
Link Quality	Displays the current quality of the link (*as descriptive colored text*) from the wireless NIC to the Wireless Access Point in real time. • The bargraph has been replaced with a descriptions: **None**, **Poor**, **Fair**, **Good**, **Very Good**, and **Excellent**. *Green color text indicates better communication quality.* • It reports the quality of the signal over the air (direct sequence spread spectrum). Even when the link quality is at its lowest you still have a connection and with it the ability to transmit and receive data, even if at much lower speeds. ***Note:*** *Both Link Quality and Signal Strength are applicable to the RF connection only. It is quite possible to have an RF signal to a Wireless Access Point but be unable to communicate with it because of either incorrect IP or encryption settings.*
Signal Strength	SNR (Signal Noise Ratio) is a measure of the relative strength of a wireless RF connection. This indicator displays a description of the signal strength from the Wireless Access Point connection. • The bargraph has been replaced with a descriptions: **None**, **Poor**, **Fair**, **Good**, **Very Good**, and **Excellent**. *Green color text indicates better signal strength.* • Given this value and the link quality above, a user can determine the noise level component of SNR. Ex: If the signal strength is high but the link quality is low then the cause of the link degradation is noise. However, if the signal strength is low and the link quality is low the cause would simply be signal strength.

Wireless Settings Page Elements (Cont.)	
Wireless Settings (Cont.):	
Data Rate	The data rate (in Mbps) at which the panel is currently communicating with a target WAP at (dynamic). • As you move closer to the target WAP (and both the signal strength/ quality), the data rate increases and as the quality degrades this rate decreases. • Data rates for 802.11g communication are: 1, 2, 5.5, 11, and 54 Mbps. • Ex: 802.11g has a max data rate is 54 Mbps.

System Settings Page

The System Settings page (FIG. 102) sets the Secondary DNS Address information with its corresponding IP communication parameters, NetLinx Master communication settings, and reads the device number assigned to the Modero panel.

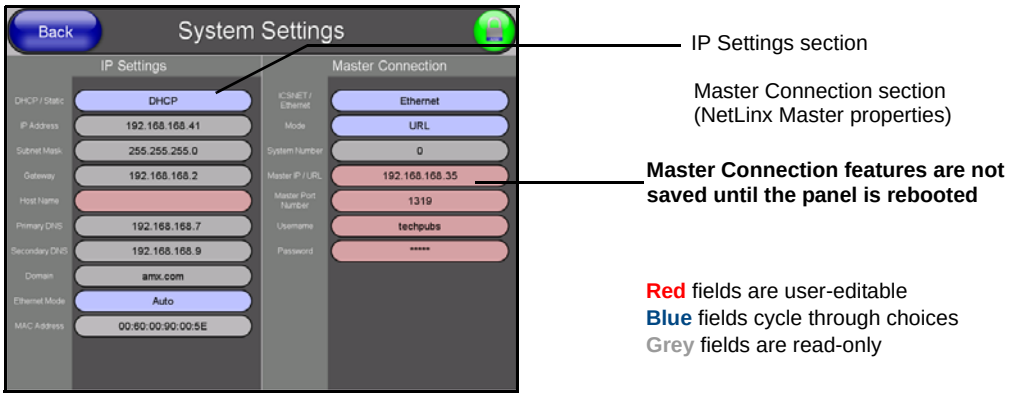


FIG. 102 System Settings page showing default values (reads and assigns values to the panel and Master)

The elements of the System Settings page are described in the table below:

System Settings Page Elements	
Back:	Saves the changes and returns you to the previously active touch panel page.
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).
IP Settings:	Sets the IP communication values for the panel and contains:
DHCP/Static	Sets the panel to either DHCP or Static communication modes. • *DHCP (Dynamic Host Configuration Protocol)* assigns IP Addresses from client stations logging onto a TCP/IP network via a DHCP server. • *Static IP* is a permanent IP Address that is assigned to a node in a TCP/IP network.
IP Address	Sets the secondary IP Address assigned to the panel.
Subnet Mask	Sets a subnetwork address to the panel. • *Subnetwork mask* is the technique used by the IP protocol to filter messages into a particular network segment (Subnet).
Gateway	Sets a gateway value to the panel. • *Gateway* is a computer that either performs protocol conversion between different types of networks/applications or acts as a go-between two or more networks that use the same protocols.
Host Name	Sets the host name of the panel.

System Settings Page Elements (Cont.)	
Primary DNS	Sets the address of the primary DNS server used for host name lookups. • *DNS (Domain Name System)* is software that lets users locate computers on a local network or the Internet (TCP/IP network) by host and domain. The DNS server maintains a database of host names for its' domain and their corresponding IP Addresses.
Secondary DNS	Sets a secondary DNS value to the panel.
Domain	Sets the unique name on the Internet to the panel for DNS look-up. • The panel belongs to the DNS domain.
Ethernet Mode	Sets the speed of the Ethernet connection to the panel. • Choices are: **Auto**, **10 Half Duplex**, **10 Full Duplex**, **100 Half Duplex,** or **100 Full Duplex.**
MAC Address	Displays a read-only field that is factory set by AMX for the built-in Ethernet interface.
Master Connection:	Sets the NetLinx Master communication values:
Type	Sets the NetLinx Master to communicate with the panel via either USB or Ethernet. This is based on the cable connection from the rear. ***ICSNet is not a supported option on this panel.*** • *Ethernet* is a CAT-5 cable (10/100Base T terminated in an RJ-45 connector) used to network computers together and is used in most LAN (local area networks). This description is also used to refer to both wired and wireless communication. • *USB* option cannot be used on Modero panels which are not equipped with a rear USB port.
Mode	Cycles between the different connection modes (URL, Listen, and Auto) ***(ETHERNET Only - disabled when USB is selected)*** • **URL** - In this mode, enter the IP/URL, Master Port Number, and username/password (if used) on the Master. - The System Number field is read-only because the panel obtains this information from the communicating Master. • **Listen** - In this mode, add the Modero panel address into the URL List in NetLinx Studio and set the connection mode to Listen. This mode allows the Modero touch panel to "listen" for the Master's communication signals. - The System Number and Master IP/URL fields are red-only. • **Auto** - In this mode, enter the System Number and a username/password (if applicable). This mode is used when both the panel and the NetLinx Master are on the same Subnet and the Master has its UDP feature enabled. - Master IP/URL field is read-only.
System Number	Allows you to enter a system number. Default value is 0 (zero). ***(ETHERNET Only - disabled when USB is selected)***
Master IP/URL	Sets the Master IP or URL of the NetLinx Master. ***(ETHERNET Only - disabled when USB is selected)***
Master Port Number	Allows you to enter the port number used with the NetLinx Master. • Default value is 1319. ***(ETHERNET Only - disabled when USB is selected)***
Username/Password	If the target Master has been previously secured, enter the alpha-numeric string (into each field) assigned to a pre-configured user profile on the Master. This profile should have the pre-defined level of access/configuration rights.

Refer to the *Step 2: Choosing a Master Connection Mode Setting* section on page 63 for more detailed information on using the System Settings page.

Programming

Overview

You can program the touch panel, using the commands in this section, to perform a wide variety of operations using Send_Commands and variable text commands.

A device must first be defined in the NetLinx programming language with values for the Device: Port: System (in all programming examples - ***Panel*** is used in place of these values and represents all Modero panels).

Verify you are using the latest NetLinx Master and Modero touch panel firmware. Verify you are also using the latest version of TPDesign4.

Button Assignments

- Button Channel Range: 1 - 4000 Button push and Feedback (per address port)
- Button Variable Text range: 1 - 4000 (per address port)
- Button States Range: 1 - 256
  (0 = All states, for General buttons 1 = Off state and 2 = On state).
- Level Range: 1 - 600 (Default level value 0 - 255, can be set up to 1 - 65535)
- Address port Range: 1 - 100

These button assignments can only be adjusted in TPD4 and not on the panels themselves.

Page Commands

These Page Commands are used in NetLinx Programming Language and are case insensitive.

Page Commands	

@APG
Add a specific popup page to a specified popup group.
	Add the popup page to a group if it does not already exist. If the new popup is added to a group which has a popup displayed on the current page along with the new pop-up, the displayed popup will be hidden and the new popup will be displayed.
	Syntax:
	`"'@APG-<popup page name>;<popup group name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	popup group name = 1 - 50 ASCII characters. Name of the popup group.
	Example:
	`SEND_COMMAND Panel,"'@APG-Popup1;Group1'"`
	Adds the popup page 'Popup1' to the popup group 'Group1'.

@CPG
Clear all popup pages from specified popup group.
	Syntax:
	`"'@CPG-<popup group name>'"`
	Variable:
	popup group name = 1 - 50 ASCII characters. Name of the popup group.
	Example:
	`SEND_COMMAND Panel,"'@CPG-Group1'"`
	Clears all popup pages from the popup group 'Group1'.

Page Commands (Cont.)	

@DPG
Delete a specific popup page from specified popup group if it exists.
	Syntax:
	`"'@DPG-<popup page name>;<popup group name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	popup group name = 1 - 50 ASCII characters. Name of the popup group.
	Example:
	`SEND_COMMAND Panel,"'@DPG-Popup1;Group1'"`
	Deletes the popup page 'Popup1' from the popup group 'Group1'.

@PDR
Set the popup location reset flag.
	If the flag is set, the popup will return to its default location on show instead of its last drag location.
	Syntax:
	`"'@PDR-<popup page name>;<reset flag>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	reset flag = 1 = Enable reset flag
	0 = Disable reset flag
	Example:
	`SEND_COMMAND Panel,"'@PDR-Popup1;1'"`
	Popup1 will return to its default location when turned On.

@PHE
Set the hide effect for the specified popup page to the named hide effect.
	Syntax:
	`"'@PHE-<popup page name>;<hide effect name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	hide effect name = Refers to the popup effect names being used.
	Example:
	`SEND_COMMAND Panel,"'@PHE-Popup1;Slide to Left'"`
	Sets the Popup1 hide effect name to 'Slide to Left'.

@PHP
Set the hide effect position.
	Only 1 coordinate is ever needed for an effect; however, the command will specify both. This command sets the location at which the effect will end at.
	Syntax:
	`"'@PHP-<popup page name>;<x coordinate>,<y coordinate>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'@PHP-Popup1;75,0'"`
	Sets the Popup1 hide effect x-coordinate value to 75 and the y-coordinate value to 0.

@PHT
Set the hide effect time for the specified popup page.
	Syntax:
	`"'@PHT-<popup page name>;<hide effect time>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	hide effect time = Given in 1/10ths of a second.
	Example:
	`SEND_COMMAND Panel,"'@PHT-Popup1;50'"`
	Sets the Popup1 hide effect time to 5 seconds.

Page Commands (Cont.)	

@PPA
Close all popups on a specified page.
	If the page name is empty, the current page is used. Same as the 'Clear Page' command in TPDesign4.
	Syntax:
	`"'@PPA-<page name>'"`
	Variable:
	page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'@PPA-Page1'"`
	Close all popups on Page1.

@PPF
Deactivate a specific popup page on either a specified page or the current page.
	If the page name is empty, the current page is used (see example 2). If the popup page is part of a group, the whole group is deactivated. This command works in the same way as the 'Hide Popup' command in TPDesign4.
	Syntax:
	`"'@PPF-<popup page name>;<page name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'@PPF-Popup1;Main'"`
	Deactivates the popup page 'Popup1' on the Main page.
	Example 2:
	`SEND_COMMAND Panel,"'@PPF-Popup1'"`
	Deactivates the popup page 'Popup1' on the current page.

@PPG
Toggle a specific popup page on either a specified page or the current page.
	If the page name is empty, the current page is used (see example 2). Toggling refers to the activating/deactivating (On/Off) of a popup page. This command works in the same way as the 'Toggle Popup' command in TPDesign4.
	Syntax:
	`"'@PPG-<popup page name>;<page name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'@PPG-Popup1;Main'"`
	Toggles the popup page 'Popup1' on the 'Main' page from one state to another (On/Off).
	Example 2:
	`SEND_COMMAND Panel,"'@PPG-Popup1'"`
	Toggles the popup page 'Popup1' on the current page from one state to another (On/Off).

@PPK
Kill a specific popup page from all pages.
	Kill refers to the deactivating (Off) of a popup window from all pages. If the pop-up page is part of a group, the whole group is deactivated. This command works in the same way as the 'Clear Group' command in TPDesign 4.
	Syntax:
	`"'@PPK-<popup page name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	Example:
	`SEND_COMMAND Panel,"'@PPK-Popup1'"`
	Kills the popup page 'Popup1' on all pages.

Page Commands (Cont.)	

@PPM
Set the modality of a specific popup page to Modal or NonModal.
	A Modal popup page, when active, only allows you to use the buttons and features on that popup page. All other buttons on the panel page are inactivated.
	Syntax:
	`"'@PPM-<popup page name>;<mode>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	mode = NONMODAL converts a previously Modal popup page to a NonModal.
	MODAL converts a previously NonModal popup page to Modal.
	modal = 1 and non-modal = 0
	Example:
	`SEND_COMMAND Panel,"'@PPM-Popup1;Modal'"`
	Sets the popup page 'Popup1' to Modal.
	`SEND_COMMAND Panel,"'@PPM-Popup1;1'"`
	Sets the popup page 'Popup1' to Modal.

@PPN
Activate a specific popup page to launch on either a specified page or the current page.
	If the page name is empty, the current page is used (see example 2). If the popup page is already on, do not re-draw it. This command works in the same way as the 'Show Popup' command in TPDesign4.
	Syntax:
	`"'@PPN-<popup page name>;<page name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'@PPN-Popup1;Main'"`
	Activates 'Popup1' on the 'Main' page.
	Example 2:
	`SEND_COMMAND Panel,"'@PPN-Popup1'"`
	Activates the popup page 'Popup1' on the current page.

@PPT
Set a specific popup page to timeout within a specified time.
	If timeout is empty, popup page will clear the timeout.
	Syntax:
	`"'@PPT-<popup page name>;<timeout>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	timeout = Timeout duration in 1/10ths of a second.
	Example:
	`SEND_COMMAND Panel,"'@PPT-Popup1;30'"`
	Sets the popup page 'Popup1' to timeout within 3 seconds.

@PPX
Close all popups on all pages.
	This command works in the same way as the 'Clear All' command in TPDesign 4.
	Syntax:
	`"'@PPX'"`
	Example:
	`SEND_COMMAND Panel,"'@PPX'"`
	Close all popups on all pages.

@PSE
Set the show effect for the specified popup page to the named show effect.
	Syntax:
	`"'@PSE-<popup page name>;<show effect name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	show effect name = Refers to the popup effect name being used.
	Example:
	`SEND_COMMAND Panel,"'@PSE-Popup1;Slide from Left'"`
	Sets the Popup1 show effect name to 'Slide from Left'.

Page Commands (Cont.)	

@PSP
Set the show effect position.
	Only 1 coordinate is ever needed for an effect; however, the command will specify both. This command sets the location at which the effect will begin at.
	Syntax:
	`"'@PSP-<popup page name>;<x coordinate>,<y coordinate>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'@PSP-Popup1;100,0'"`
	Sets the Popup1 show effect x-coordinate value to 100 and the y-coordinate value to 0.

@PST
Set the show effect time for the specified popup page.
	Syntax:
	`"'@PST-<popup page name>;<show effect time>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	show effect time = Given in 1/10ths of a second.
	Example:
	`SEND_COMMAND Panel,"'@PST-Popup1;50'"`
	Sets the Popup1 show effect time to 5 seconds.

PAGE
Flip to a specified page.
	Flips to a page with a specified page name. If the page is currently active, it will not redraw the page.
	Syntax:
	`"'PAGE-<page name>'"`
	Variable:
	page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'PAGE-Page1'"`
	Flips to page1.

PPOF
Deactivate a specific popup page on either a specified page or the current page.
	If the page name is empty, the current page is used (see example 2). If the popup page is part of a group, the whole group is deactivated. This command works in the same way as the 'Hide Popup' command in TPDesign4.
	Syntax:
	`"'PPOF-<popup page name>;<page name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'PPOF-Popup1;Main'"`
	Deactivates the popup page 'Popup1' on the Main page.
	Example 2:
	`SEND_COMMAND Panel,"'PPOF-Popup1'"`
	Deactivates the popup page 'Popup1' on the current page.

Page Commands (Cont.)	

PPOG
Toggle a specific popup page on either a specified page or the current page.
	If the page name is empty, the current page is used (see example 2). Toggling refers to the activating/deactivating (On/Off) of a popup page. This command works in the same way as the 'Toggle Popup' command in TPDesign4.
	Syntax:
	`"'PPOG-<popup page name>;<page name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'PPOG-Popup1;Main'"`
	Toggles the popup page 'Popup1' on the Main page from one state to another (On/Off).
	Example 2:
	`SEND_COMMAND Panel,"'PPOG-Popup1'"`
	Toggles the popup page 'Popup1' on the current page from one state to another (On/Off).

PPON
Activate a specific popup page to launch on either a specified page or the current page.
	If the page name is empty, the current page is used (see example 2). If the popup page is already On, do not re-draw it. This command works in the same way as the 'Show Popup' command in TPDesign4.
	Syntax:
	`"'PPON-<popup page name>;<page name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'PPON-Popup1; Main'"`
	Activates the popup page 'Popup1' on the Main page.
	Example 2:
	`SEND_COMMAND Panel,"'PPON-Popup1'"`
	Activates the popup page 'Popup1' on the current page.

Programming Numbers

The following information provides the programming numbers for colors, fonts, and borders.

Colors can be used to set the colors on buttons, sliders, and pages. The lowest color number represents the lightest color-specific display; the highest number represents the darkest display.
For example, 0 represents light red, and 5 is dark red.

RGB Triplets And Names For Basic 88 Colors

RGB Values for all 88 Basic Colors				
Index No.	Name	Red	Green	Blue
00	Very Light Red	255	0	0
01	Light Red	223	0	0
02	Red	191	0	0
03	Medium Red	159	0	0
04	Dark Red	127	0	0
05	Very Dark Red	95	0	0
06	Very Light Orange	255	128	0
07	Light Orange	223	112	0
08	Orange	191	96	0
09	Medium Orange	159	80	0
10	Dark Orange	127	64	0
11	Very Dark Orange	95	48	0
12	Very Light Yellow	255	255	0
13	Light Yellow	223	223	0
14	Yellow	191	191	0
15	Medium Yellow	159	159	0

RGB Values for all 88 Basic Colors (Cont.)				
Index No.	Name	Red	Green	Blue
16	Dark Yellow	127	127	0
17	Very Dark Yellow	95	95	0
18	Very Light Lime	128	255	0
19	Light Lime	112	223	0
20	Lime	96	191	0
21	Medium Lime	80	159	0
22	Dark Lime	64	127	0
23	Very Dark Lime	48	95	0
24	Very Light Green	0	255	0
25	Light Green	0	223	0
26	Green	0	191	0
27	Medium Green	0	159	0
28	Dark Green	0	127	0
29	Very Dark Green	0	95	0
30	Very Light Mint	0	255	128
31	Light Mint	0	223	112
32	Mint	0	191	96
33	Medium Mint	0	159	80
34	Dark Mint	0	127	64
35	Very Dark Mint	0	95	48
36	Very Light Cyan	0	255	255
37	Light Cyan	0	223	223
38	Cyan	0	191	191
39	Medium Cyan	0	159	159
40	Dark Cyan	0	127	127
41	Very Dark Cyan	0	95	95
42	Very Light Aqua	0	128	255
43	Light Aqua	0	112	223
44	Aqua	0	96	191
45	Medium Aqua	0	80	159
46	Dark Aqua	0	64	127
47	Very Dark Aqua	0	48	95
48	Very Light Blue	0	0	255
49	Light Blue	0	0	223
50	Blue	0	0	191
51	Medium Blue	0	0	159
52	Dark Blue	0	0	127
53	Very Dark Blue	0	0	95
54	Very Light Purple	128	0	255
55	Light Purple	112	0	223
56	Purple	96	0	191
57	Medium Purple	80	0	159
58	Dark Purple	64	0	127
59	Very Dark Purple	48	0	95
60	Very Light Magenta	255	0	255
61	Light Magenta	223	0	223
62	Magenta	191	0	191
63	Medium Magenta	159	0	159
64	Dark Magenta	127	0	127
65	Very Dark Magenta	95	0	95
66	Very Light Pink	255	0	128
67	Light Pink	223	0	112
68	Pink	191	0	96
69	Medium Pink	159	0	80
70	Dark Pink	127	0	64
71	Very Dark Pink	95	0	48

RGB Values for all 88 Basic Colors (Cont.)				
Index No.	Name	Red	Green	Blue
72	White	255	255	255
73	Grey1	238	238	238
74	Grey3	204	204	204
75	Grey5	170	170	170
76	Grey7	136	136	136
77	Grey9	102	102	102
78	Grey4	187	187	187
79	Grey6	153	153	153
80	Grey8	119	119	119
81	Grey10	85	85	85
82	Grey12	51	51	51
83	Grey13	34	34	34
84	Grey2	221	221	221
85	Grey11	68	68	68
86	Grey14	17	17	17
87	Black	0	0	0
255	TRANSPARENT	99	53	99

Font Styles and ID Numbers

Font styles can be used to program the text fonts on buttons, sliders, and pages. The following chart shows the default font type and their respective ID numbers generated by TPDesign4.

Default Font Styles and ID Numbers					
Font ID #	Font type	Size	Font ID #	Font type	Size
1	Courier New	9	19	Arial	9
2	Courier New	12	20	Arial	10
3	Courier New	18	21	Arial	12
4	Courier New	26	22	Arial	14
5	Courier New	32	23	Arial	16
6	Courier New	18	24	Arial	18
7	Courier New	26	25	Arial	20
8	Courier New	34	26	Arial	24
9	AMX Bold	14	27	Arial	36
10	AMX Bold	20	28	Arial Bold	10
11	AMX Bold	36	29	Arial Bold	8
			32 - Variable Fonts start at 32.		

You must import fonts into a TPDesign4 project file. The font ID numbers are assigned by TPDesign4. These values are also listed in the ***Generate Programmer's Report****.*

Border styles

The TPDesign4 Touch Panel Design program has pre-set border styles that are user selectable. TPD4 border styles can ONLY be changed by using the name.

TPD4 Border Styles by Name	
Border styles	Border styles
None	Diamond 55
AMX Elite -L	Diamond 65
AMX Elite -M	Diamond 75
AMX Elite -S	Double Bevel -L
Bevel -L	Double Bevel -M
Bevel -M	Double Bevel -S
Bevel -S	Double Line

TPD4 Border Styles by Name (Cont.)	
Border styles	Border styles
Circle 15	Fuzzy
Circle 25	Glow-L
Circle 35	Help Down
Circle 45	Help Down Reversed
Circle 55	Menu Bottom Rounded 15
Circle 65	Menu Bottom Rounded 25
Circle 75	Menu Bottom Rounded 35
Circle 85	Menu Bottom Rounded 45
Circle 95	Menu Bottom Rounded 55
Circle 105	Menu Bottom Rounded 65
Circle 115	Menu Bottom Rounded 75
Circle 125	Menu Bottom Rounded 85
Circle 135	Menu Bottom Rounded 95
Circle 145	Menu Bottom Rounded 105
Circle 155	Menu Bottom Rounded 115
Circle 165	Menu Bottom Rounded 125
Circle 175	Menu Bottom Rounded 135
Circle 185	Menu Bottom Rounded 145
Circle 195	Menu Bottom Rounded 155
Cursor Bottom	Menu Bottom Rounded 165
Cursor Bottom with Hole	Menu Bottom Rounded 175
Cursor Top	Menu Bottom Rounded 185
Cursor Top with Hole	Menu Bottom Rounded 195
Cursor Left	Menu Left Rounded 15
Cursor Left with Hole	Menu Left Rounded 25
Cursor Right	Menu Left Rounded 35
Cursor Right with Hole	Menu Left Rounded 45
Custom Frame	Menu Left Rounded 55
Diamond 15	Menu Left Rounded 65
Diamond 25	Menu Left Rounded 75
Diamond 35	Menu Left Rounded 85
Diamond 45	Menu Left Rounded 95
Menu Left Rounded 105	Menu Top Rounded 65
Menu Left Rounded 115	Menu Top Rounded 75
Menu Left Rounded 125	Menu Top Rounded 85
Menu Left Rounded 135	Menu Top Rounded 95
Menu Left Rounded 145	Menu Top Rounded 105
Menu Left Rounded 155	Menu Top Rounded 115
Menu Left Rounded 165	Menu Top Rounded 125
Menu Left Rounded 175	Menu Top Rounded 135
Menu Left Rounded 185	Menu Top Rounded 145
Menu Left Rounded 195	Menu Top Rounded 155
Menu Right Rounded 15	Menu Top Rounded 165
Menu Right Rounded 25	Menu Top Rounded 175
Menu Right Rounded 35	Menu Top Rounded 185
Menu Right Rounded 45	Menu Top Rounded 195
Menu Right Rounded 55	Neon Active -L
Menu Right Rounded 65	Neon Active -S
Menu Right Rounded 75	Neon Inactive -L
Menu Right Rounded 85	Neon Inactive -S
Menu Right Rounded 95	Oval V 30x60
Menu Right Rounded 105	Oval V 50x100
Menu Right Rounded 115	Oval V 75x150
Menu Right Rounded 125	Oval V 100x200
Menu Right Rounded 135	Oval H 60x30
Menu Right Rounded 145	Oval H 100x50

TPD4 Border Styles by Name (Cont.)	
Border styles	Border styles
Menu Right Rounded 155	Oval H 150x75
Menu Right Rounded 165	Oval H 200x100
Menu Right Rounded 175	Picture Frame
Menu Right Rounded 185	Quad Line
Menu Right Rounded 195	Single Line
Menu Rounded Spacer - Vertical	Windows Style Popup
Menu Rounded Spacer - Horizontal	Window Style Popup (Status Bar)
Menu Top Rounded 55	

"^" Button Commands

These Button Commands are used in NetLinx Studio and are case insensitive.

All commands that begin with "^" have the capability of assigning a variable text address range and button state range. **A device must first be defined in the NetLinx programming language with values for the Device: Port : System** (in all programming examples - ***Panel*** is used in place of these values).

- **Variable text ranges** allow you to target 1 or more variable text channels in a single command.
- **Button State ranges** allow you to target 1 or more states of a variable text button with a single command.
- **"."** Character is used for the 'through' notation, also the "**&**" character is used for the 'And' notation.

"^" Button Commands	

^ANI
Run a button animation (in 1/10 second).
	Syntax:
	`"'^ANI-<vt addr range>,<start state>,<end state>,<time>'"`
	Variable:
	variable text address range = 1 - 4000.
	start state = Beginning of button state (0= current state).
	end state = End of button state.
	time = In 1/10 second intervals.
	Example:
	`SEND_COMMAND Panel,"'^ANI-500,1,25,100'"`
	Runs a button animation at text range 500 from state 1 to state 25 for 10 second.

^APF
Add page flip action to a button if it does not already exist.
	Syntax:
	`"'^APF-<vt addr range>,<page flip action>,<page name>'"`
	Variable:
	variable text address range = 1 - 4000.
	page flip action =
	Stan[dardPage] - Flip to standard page
	Prev[iousPage] - Flip to previous page
	Show[Popup] - Show Popup page
	Hide[Popup] - Hide Popup page
	Togg[lePopup] - Toggle popup state
	ClearG[roup] - Clear popup page group from all pages
	ClearP[age] - Clear all popup pages from a page with the specified page name
	ClearA[ll] - Clear all popup pages from all pages
	page name = 1 - 50 ASCII characters.
	Example:
	`SEND COMMAND Panel,"'^APF-400,Stan,Main Page'"`
	Assigns a button to a standard page flip with page name 'Main Page'.

"^" Button Commands (Cont.)	

^BAT
Append non-unicode text.
	Syntax:
	`"'^BAT-<vt addr range>,<button states range>,<new text>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	new text = 1 - 50 ASCII characters.
	Example:
	`SEND_COMMAND Panel,"'^BAT-520,1,Enter City'"`
	Appends the text 'Enter City' to the button's OFF state.

^BAU
Append unicode text.
	Same format as ^UNI.
	Syntax:
	`"'^BAU-<vt addr range>,<button states range>,<unicode text>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	unicode text = 1 - 50 ASCII characters. Unicode characters must be entered in Hex format.
	Example:
	`SEND_COMMAND Panel,"'^BAU-520,1,00770062'"`
	Appends Unicode text '00770062' to the button's OFF state.

^BCB
Set the border color to the specified color.
	Only if the specified border color is not the same as the current color.
	***Note**: Color can be assigned by color name (without spaces), number or R,G,B value (RRGGBB or RRGGBBAA).*
	Syntax:
	`"'^BCB-<vt addr range>,<button states range>,<color value>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	color value = Refer to theRGB Values for all 88 Basic Colors table on page 114 for more information.
	Example:
	`SEND_COMMAND Panel,"'^BCB-500.504&510,1,12'"`
	Sets the Off state border color to 12 (Yellow). Colors can be set by Color Numbers, Color name, R,G,B,alpha colors (RRGGBBAA) and R, G & B colors values (RRGGBB).
	Refer to theRGB Values for all 88 Basic Colors table on page 114.

"^" Button Commands (Cont.)	

^BCF
Set the fill color to the specified color.
	Only if the specified fill color is not the same as the current color.
	***Note**: Color can be assigned by color name (without spaces), number or R,G,B value (RRGGBB or RRGGBBAA).*
	Syntax:
	`"'^BCF-<vt addr range>,<button states range>,<color value>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	color value = Refer to theRGB Values for all 88 Basic Colors table on page 114 for more information.
	Example:
	`SEND_COMMAND Panel,"'^BCF-500.504&510.515,1,12'"`
	`SEND_COMMAND Panel,"'^BCF-500.504&510.515,1,Yellow'"`
	`SEND_COMMAND Panel,"'^BCF-500.504&510.515,1,#F4EC0A63''"`
	`SEND_COMMAND Panel,"'^BCF-500.504&510.515,1,#F4EC0A'"`
	Sets the Off state fill color by color number. Colors can be set by Color Numbers, Color name, R,G,B,alpha colors (RRGGBBAA) and R, G & B colors values (RRGGBB).

^BCT
Set the text color to the specified color.
	Only if the specified text color is not the same as the current color.
	***Note**: Color can be assigned by color name (without spaces), number or R,G,B value (RRGGBB or RRGGBBAA).*
	Syntax:
	`"'^BCT-<vt addr range>,<button states range>,<color value>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	color value = Refer to theRGB Values for all 88 Basic Colors table on page 114 for more information.
	Example:
	`SEND_COMMAND Panel,"'^BCT-500.504&510,1,12'"`
	Sets the Off state border color to 12 (Yellow). Colors can be set by Color Numbers, Color name, R,G,B,alpha colors (RRGGBBAA) and R, G & B colors values (RRGGBB).

^BDO
Set the button draw order.
	Determines what order each layer of the button is drawn.
	Syntax:
	`"'^BDO-<vt addr range>,<button states range>,<1-5><1-5><1-5><1-5><1-5>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	layer assignments = Fill Layer = 1
	Image Layer = 2
	Icon Layer = 3
	Text Layer = 4
	Border Layer = 5
	***Note**: The layer assignments are from bottom to top. The default draw order is* **12345**.
	Example:
	`SEND_COMMAND Panel,"'^BDO-530,1&2,51432'"`
	Sets the button's variable text 530 ON/OFF state draw order (from bottom to top) to Border, Fill, Text, Icon, and Image.
	Example 2:
	`SEND_COMMAND Panel,"'^BDO-1,0,12345'"`
	Sets all states of a button back to its default drawing order.

"^" Button Commands (Cont.)	

^BFB
Set the feedback type of the button.
	ONLY works on General-type buttons.
	Syntax:
	`"'^BFB-<vt addr range>,<feedback type>'"`
	Variable:
	variable text address range = 1 - 4000.
	feedback type = (None, Channel, Invert, On (Always on), Momentary, and Blink).
	Example:
	`SEND_COMMAND Panel,"'^BFB-500,Momentary'"`
	Sets the Feedback type of the button to 'Momentary'.

^BIM
Set the input mask for the specified address.
	Syntax:
	`"'^BIM-<vt addr range>,<input mask>'"`
	Variable:
	variable text address range = 1 - 4000.
	input mask = Refer to the*Text Area Input Masking* section on page 158 for character types.
	Example:
	`SEND_COMMAND Panel,"'^BIM-500,AAAAAAAAAA'"`
	Sets the input mask to ten 'A' characters, that are required, to either a letter or digit **(entry is required).**

^BLN
Set the number of lines removed equally from the top and bottom of a composite video signal.
	The maximum number of lines to remove is 240. A value of 0 will display the incoming video signal unaffected. This command is used to scale non 4x3 video images into non 4x3 video buttons.
	Syntax:
	`"'^BLN-<vt addr range>,<button states range>,<number of lines>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	number of lines = 0 - 240.
	Example:
	`SEND_COMMAND Panel,"'^BLN-500,55'"`
	Equally removes 55 lines from the top and 55 lines from the bottom of the video button.

"^" Button Commands (Cont.)	

^BMC
Button copy command. Copy attributes of the source button to all the destination buttons.
	Note that the source is a single button state. Each state must be copied as a separate command. The <codes> section represents what attributes will be copied. All codes are 2 char pairs that can be separated by comma, space, percent or just ran together.
	Syntax:
	`"'^BMC-<vt addr range>,<button states range>,<source port>,<source address>,<source state>,<codes>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	source port = 1 - 100
	source address = 1 - 4000
	source state = 1 - 256
	codes:
	BM - Picture/Bitmap
	BR - Border
	CB - Border Color
	CF - Fill Color
	CT - Text Color
	EC - Text effect color
	EF - Text effect
	FT - Font
	IC - Icon
	JB - Bitmap alignment
	JI - Icon alignment
	JT - Text alignment
	LN - Lines of video removed
	OP - Opacity
	SO - Button Sound
	TX - Text
	VI - Video slot ID
	WW - Word wrap on/off
	Example:
	`SEND_COMMAND Panel,"'^BMC-425,1,1,500,1,BR'"`
	`or`
	`SEND_COMMAND Panel,"'^BMC-425,1,1,500,1,%BR'"`
	Copies the OFF state border of button with a variable text address of 500 onto the OFF state border of button with a variable text address of 425.
	Example 2:
	`SEND_COMMAND Panel,"'^BMC-150,1,1,315,1,%BR%FT%TX%BM%IC%CF%CT'"`
	Copies the OFF state border, font, Text, bitmap, icon, fill color and text color of the button with a variable text address of 315 onto the OFF state border, font, Text, bitmap, icon, fill color and text color of the button with a variable text address of 150.

"^" Button Commands (Cont.)	
^BMF Set any/all button parameters by sending embedded codes and data.	Syntax: `"'^BMF-<vt addr range>,<button states range>,<data>'"` Variables: variable text address char array = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). level range = 1 - 600 (level value is 1 - 65535). data: '%B<border style>' = Set the border style name. See theTPD4 Border Styles by Name table on page 116. '%B',<border 0-27,40,41> = Set the borer style number. See theTPD4 Border Styles by Name table on page 116. '%DO<1-5><1-5><1-5><1-5><1-5> = Set the draw order. Listed from bottom to top. Refer to the ^BDO command on page 120 for more information. '%F',<font 1-8,10,11,20-29,32-xx> = Set the font. See theDefault Font Styles and ID Numbers table on page 116. '%F<font 01-08,10,11,20-29,32-xx>' = Set the font. See theDefault Font Styles and ID Numbers table on page 116. '%MI<mask image>' = Set the mask image. Refer to the ^BMI command on page 125 for more information. '%T<text >' = Set the text using ASCII characters (empty is clear). '%P<bitmap>' = Set the picture/bitmap filename (empty is clear). '%I',<icon 01-9900, 0-clear>' = Set the icon using values of 01 - 9900 (icon numbers are assigned in the TPDesign4 Resource Manager tab - Slots section). '%I<icon 01-9900, 0-clear>' = Set the icon using values of 01 - 9900 (icon numbers are assigned in the TPDesign4 Resource Manager tab - Slots section). '%J',<alignment of text 1-9> = As shown the following telephone keypad alignment chart: 0 1 2 3 4 5 6 7 8 9 Zero can be used for an absolute position '%JT<alignment of text 0-9>' = As shown the above telephone keypad alignment chart, **BUT** the 0 (zero) is absolute and followed by **',<left>,<top>'** '%JB<alignment of bitmap/picture 0-9>' = As shown the above telephone keypad alignment chart BUT the 0 (zero) is absolute and followed by **',<left>,<top>'** '%JI<alignment of icon 0-9>' = As shown the above telephone keypad alignment chart, **BUT** the 0 (zero) is absolute and followed by **',<left>,<top>'** *For some of these commands and values, refer to* theRGB Values for all 88 Basic Colors table on page 114. '%CF<on fill color>' = Set Fill Color. '%CB<on border color>' = Set Border Color. '%CT<on text color>' = Set Text Color. '%SW<1 or 0>' = Show/hide a button. '%SO<sound>' = Set the button sound. '%EN<1 or 0>' = Enable/disable a button. '%WW<1 or 0>' = Word wrap On/Off. '%GH<bargraph hi>' = Set the bargraph upper limit. '%GL<bargraph low>' = Set the bargraph lower limit. '%GN<bargraph slider name>' = Set the bargraph slider name/Joystick cursor name. '%GC<bargraph slider color>' = Set the bargraph slider color/Joystick cursor color.

"^" Button Commands (Cont.)	
^BMF (Cont.)	'%GI<bargraph invert>' = Set the bargraph invert/noninvert or joystick coordinate (0,1,2,3). *^GIV* section on page 131 more information. '%GU<bargraph ramp up>' = Set the bargraph ramp up time in intervals of 1/10 second. '%GD<bargraph ramp down>' = Set the bargraph ramp down time in 1/10 second. '%GG<bargraph drag increment> = Set the bargraph drag increment. Refer to the ^GDI command on page 130 for more information. '%VI<video On/Off>' = Set the Video either On (value=1) or Off (value=0). '%OT<feedback type>' = Set the Feedback (Output) Type to one of the following: None, Channel,Invert, On (AlwaysOn), Momentary, or Blink. '%SM' = Submit a text for text area button. '%SF<1 or 0>' = Set the focus for text area button. '%OP<0-255>' = Set the button opacity to either Invisible (value=0) or Opaque (value=255). '%OP#<00-FF>' = Set the button opacity to either Invisible (value=00) or Opaque (value=FF). '%UN<Unicode text>' = Set the Unicode text. See the*^UNI* section on page 136 for the text format. '%LN<0-240>' = Set the lines of video being removed. See the*^BLN* section on page 121 for more information. '%EF<text effect name>' = Set the text effect. '%EC<text effect color>' = Set the text effect color. '%ML<max length>' = Set the maximum length of a text area. '%MK<input mask>' = Set the input mask of a text area. '%VL<0-1>' = Log-On/Log-Off the computer control connection '%VN<network name>' = Set network connection name. '%VP<password>' = Set the network connection password. Example: `SEND_COMMAND Panel,"'^BMF-500,1,%B10%CFRed%CB Blue %CTBlack%Ptest.png'"` Sets the button OFF state as well as the Border, Fill Color, Border Color, Text Color, and Bitmap.

"^" Button Commands (Cont.)	

^BMI
Set the button mask image.
	Mask image is used to crop a borderless button to a non-square shape. This is typically used with a bitmap.
	Syntax:
	`"'^BMI-<vt addr range>,<button states range>,<mask image>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	mask image = Graphic file used.
	Example:
	`SEND_COMMAND Panel,"'^BMI-530,1&2,newMac.png'"`
	Sets the button with variable text 530 ON/OFF state mask image to 'newmac.png'.
	
	'"^BMI-<variable text address range>,<button states range>,<mask image>"'
	Set the Chameleon Image button property. See Working With Chameleon Images in TPD4 Help.
	Note: If the Border Style properties is set to something other than 'None', no visible change will occur. Setting the Border Style to 'None' via ^BOR or ^BMF..%B will reveal the Chameleon image.
	Syntax:
	`SEND_COMMAND <DEV>,"'^BMI-<vt addr range>,<button states range>,<mask image>'"`
	Variables:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons
	(0 = All states, for General buttons 1 = Off state and 2 = On state).
	mask image = Chameleon used.
	Example:
	`SEND_COMMAND Panel,"'^BMI-530,1&2,newMac.png'"`
	Sets the button with variable text 530 ON/OFF state mask image to 'newmac.png'.

^BML
Set the maximum length of the text area button.
	If this value is set to zero (0) there is no max length. The maximum length available is 2000. This is only for a Text area input button and not for a Text area input masking button.
	Syntax:
	`"'^BML-<vt addr range>,<max length>'"`
	Variable:
	variable text address range = 1 - 4000.
	max length = 2000 (0=no max length).
	Example:
	`SEND_COMMAND Panel,"'^BML-500,20'"`
	Sets the maximum length of the text area input button to 20 characters.

^BMP
Assign a picture to those buttons with a defined address range.
	Syntax:
	`"'^BMP-<vt addr range>,<button states range>,<name of bitmap/picture>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	name of bitmap/picture = 1 - 50 ASCII characters.
	Example:
	`SEND_COMMAND Panel,"'^BMP-500.504&510.515,1,bitmap.png'"`
	Sets the OFF state picture for the buttons with variable text ranges of 500-504 & 510-515.

"^" Button Commands (Cont.)	
^BNC Clear current TakeNote annotations.	Syntax: "'^BNC-<vt addr range>,<command value>'" Variable: variable text address range = 1 - 4000. command value = (0= clear, 1= clear all). Example: SEND_COMMAND Panel,"'^BNC-973,0'" Clears the annotation of the TakeNote button with variable text 973.
^BNN Set the TakeNote network name for the specified Addresses.	Syntax: "'^BNN-<vt addr range>,<network name>'" Variable: variable text address range = 1 - 4000. network name = Use a valid IP Address. Example: SEND_COMMAND Panel,"'^BNN-973,192.168.169.99'" Sets the TakeNote button network name to 192.168.169.99.
^BNT Set the TakeNote network port for the specified Addresses.	Syntax: "'^BNT-<vt addr range>,<network port>'" Variable: variable text address range = 1 - 4000. network port = 1 - 65535. Example: SEND_COMMAND Panel,"'^BNT-973,5000'" Sets the TakeNote button network port to 5000.
^BOP Set the button opacity.	The button opacity can be specified as a decimal between 0 - 255, where zero (0) is invisible and 255 is opaque, or as a HEX code, as used in the color commands by preceding the HEX code with the # sign. In this case, #00 becomes invisible and #FF becomes opaque. If the opacity is set to zero (0), this does not make the button inactive, only invisible. Syntax: "'^BOP-<vt addr range>,<button states range>,<button opacity>'" Variable: variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). button opacity = 0 (invisible) - 255 (opaque). Example: SEND_COMMAND Panel,"'^BOP-500.504&510.515,1,200'" Example 2: SEND_COMMAND Panel,"'^BOP-500.504&510.515,1,#C8'" Both examples set the opacity of the buttons with the variable text range of 500-504 and 510-515 to 200.

"^" Button Commands (Cont.)	

^BOR
Set a border to a specific border style associated with a border value for those buttons with a defined address range.
	Refer to theTPD4 Border Styles by Name table on page 116 for more information.
	Syntax:
	`"'^BOR-<vt addr range>,<border style name or border value>'"`
	Variable:
	variable text address range = 1 - 4000.
	border style name = Refer to theTPD4 Border Styles by Name table on page 116.
	border value = 0 - 41.
	Examples:
	`SEND_COMMAND Panel,"'^BOR-500.504&510.515,10'"`
	Sets the border by number (#10) to those buttons with the variable text range of 500-504 & 510-515.
	`SEND_COMMAND Panel,"'^BOR-500.504&510,AMX Elite -M'"`
	Sets the border by name (AMX Elite) to those buttons with the variable text range of 500-504 & 510-515.
	The border style is available through the TPDesign4 border-style drop-down list. Refer to theTPD4 Border Styles by Name table on page 116 for more information.

^BOS
Set the video window slot ID # to the new Slot ID #.
	The new Slot ID # is set only if the specified slot is not the same as the current slot selected. Passthru sets the passthru mode to On.
	This is an optional parameter and ONLY passes data to the PC.
	Syntax:
	`"'^BOS-<vt addr range>,<button states range>,<slot number>,<passthru>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	slot number = **0** = No Video Fill (**Video Off**)
	1 = Composite Video (Video Fill) (**Video On**)
	2 = Component RGB
	3 = Streaming Video. ***1200V panels only have Slot 1 available.***
	passthru = Passthru disable = 0 or Passthru enable = 2.
	Example:
	`SEND_COMMAND Panel,"'^BOS-500,1,1'"`
	Sets the button to display Composite video with no pass-thru.
	Refer to the*Video Adjustment Slide-Out Option Bar* section on page 91 for more information on the slot assignments within a panel.

^BPP
Set or clear the protected page flip flag of a button.
	Zero clears the flag.
	Syntax:
	`"'^BPP-<vt addr range>,<protected page flip flag value>'"`
	Variable:
	variable text address range = 1 - 4000.
	protected page flip flag value range = 0 - 4 (**0 clears the flag**).
	Example:
	`SEND_COMMAND Panel,"'^BPP-500,1'"`
	Sets the button to protected page flip flag 1 (sets it to password 1).

"^" Button Commands (Cont.)	

^BRD
Set the border of a button state/ states.
	Only if the specified border is not the same as the current border. The border names are available through the TPDesign4 border-name drop-down list.
	Syntax:
	`"'^BRD-<vt addr range>,<button states range>,<border name>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	border name = Refer toTPD4 Border Styles by Name table on page 116.
	Example:
	`SEND_COMMAND Panel,"'^BRD-500.504&510.515,1&2,Quad Line'"`
	Sets the border by name (Quad Line) to those buttons with the variable text range of 500-504 & 510-515.
	Refer to theTPD4 Border Styles by Name table on page 116.

^BSF
Set the focus to the text area.
	***Note**: Select one button at a time (single variable text address). Do not assign a variable text address range to set focus to multiple buttons. Only one variable text address can be in focus at a time.*
	Syntax:
	`"'^BSF-<vt addr range>,<selection value>'"`
	Variable:
	variable text address range = 1 - 4000.
	selection value = Unselect = 0 and select = 1.
	Example:
	`SEND_COMMAND Panel,"'^BSF-500,1'"`
	Sets the focus to the text area of the button.

^BSM
Submit text for text area buttons.
	This command causes the text areas to send their text as strings to the NetLinx Master.
	Syntax:
	`"'^BSM-<vt addr range>'"`
	Variable:
	variable text address range = 1 - 4000.
	Example:
	`SEND_COMMAND Panel,"'^BSM-500'"`
	Submits the text of the text area button.

^BSO
Set the sound played when a button is pressed.
	If the sound name is blank the sound is then cleared. If the sound name is not matched, the button sound is not changed.
	Syntax:
	`"'^BSO-<vt addr range>,<button states range>,<sound name>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	sound name = (**blank** - sound cleared, **not matched** - button sound not changed).
	Example:
	`SEND_COMMAND Panel,"'^BSO-500,1&2,music.wav'"`
	Assigns the sound 'music.wav' to the button Off/On states.

^BVL
Log-On/Log-Off the computer control connection.
	Syntax:
	`"'^BVL-<vt addr range>,<connection>'"`
	Variable:
	variable text address range = 1 - 4000.
	connection = 0 (Log-Off connection) and 1 (Log-On connection).
	Example:
	`SEND_COMMAND Panel,"'^BVL-500,0'"`
	Logs-off the computer control connection of the button.

"^" Button Commands (Cont.)	

^BVN
Set the computer control remote host for the specified address.
	Syntax:
	`SEND_COMMAND <DEV>,"'^BVN-<vt addr range>,<remote host>'"`
	Variables:
	variable text address range = 1 - 4000.
	remote host = 1 - 50 ASCII characters.
	Example:
	`SEND_COMMAND Panel,"'^BVN-500,191.191.191.191'"`
	Sets the remote host to '191.191.191.191' for the specific computer control button.

^BVP
Set the network password for the specified address.
	Syntax:
	`"'^BVP-<vt addr range>,<network password>'"`
	Variable:
	variable text address range = 1 - 4000.
	network password = 1 - 50 ASCII characters.
	Example:
	`SEND_COMMAND Panel,"'^BVP-500,PCLOCK'"`
	Sets the password to PCLOCK for the specific PC control button.

^BVT
Set the computer control network port for the specified address.
	Syntax:
	`"'^BVT-<vt addr range>,<network port>'"`
	Variable:
	variable text address range = 1 - 4000.
	network port = 1 - 65535.
	Example:
	`SEND_COMMAND Panel,"'^BVT-500,5000'"`
	Sets the network port to 5000.

^BWW
Set the button word wrap feature to those buttons with a defined address range.
	By default, word-wrap is Off.
	Syntax:
	`"'^BWW-<vt addr range>,<button states range>,<word wrap>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	word wrap = (0=Off and 1=On). Default is Off.
	Example:
	`SEND_COMMAND Panel,"'^BWW-500,1,1'"`
	Sets the word wrap on for the button's Off state.

^CPF
Clear all page flips from a button.
	Syntax:
	`"'^CPF-<vt addr range>'"`
	Variable:
	variable text address range = 1 - 4000.
	Example:
	`SEND_COMMAND Panel,"'^CPF-500'"`
	Clears all page flips from the button.

"^" Button Commands (Cont.)	

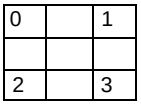
^DPF
Delete page flips from button if it already exists.
	Syntax:
	`"'^DFP-<vt addr range>,<actions>,<page name>'"`
	Variable:
	variable text address range = 1 - 4000.
	actions =
	Stan[dardPage] - Flip to standard page
	Prev[iousPage] - Flip to previous page
	Show[Popup] - Show Popup page
	Hide[Popup] - Hide Popup page
	Togg[lePopup] - Toggle popup state
	ClearG[roup] - Clear popup page group from all pages
	ClearP[age] - Clear all popup pages from a page with the specified page name
	ClearA[ll] - Clear all popup pages from all pages
	page name = 1 - 50 ASCII characters.
	Example:
	`SEND COMMAND Panel,"'^DPF-409,Prev'"`
	Deletes the assignment of a button from flipping to a previous page.

^ENA
Enable or disable buttons with a set variable text range.
	Syntax:
	`"'^ENA-<vt addr range>,<command value>'"`
	Variable:
	variable text address range = 1 - 4000.
	command value = (0= disable, 1= enable)
	Example:
	`SEND_COMMAND Panel,"'^ENA-500.504&510.515,0'"`
	Disables button pushes on buttons with variable text range 500-504 & 510-515.

^FON
Set a font to a specific Font ID value for those buttons with a defined address range.
	Font ID numbers are generated by the TPDesign4 programmers report.
	Syntax:
	`"'^FON-<vt addr range>,<button states range>,<font value>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	font value = range = 1 - XXX. Refer to theDefault Font Styles and ID Numbers table on page 116.
	Example:
	`SEND_COMMAND Panel,"'^FON-500.504&510.515,1&2,4'"`
	Sets the font size to font ID #4 for the On and Off states of buttons with the variable text range of 500-504 & 510-515.
	***Note**: The Font ID is generated by TPD4 and is located in TPD4 through the Main menu. Panel > Generate Programmer's Report >Text Only Format >Readme.txt.*

^GDI
Change the bargraph drag increment.
	Syntax:
	`"'^GDI-<vt addr range>,<bargraph drag increment>'"`
	Variable:
	variable text address range = 1 - 4000.
	bargraph drag increment = The default drag increment is 256.
	Example:
	`SEND_COMMAND Panel,"'^GDI-7,128'"`
	Sets the bargraph with variable text 7 to a drag increment of 128.

"^" Button Commands (Cont.)	

^GIV
Invert the joystick axis to move the origin to another corner.
	Parameters 1,2, and 3 will cause a bargraph or slider to be inverted regardless of orientation. Their effect will be as described for joysticks.
	Syntax:
	`"'^GIV-<vt addr range>,<joystick axis to invert>'"`
	Variable:
	variable text address range = 1 - 4000.
	joystick axis to invert = 0 - 3.
	 
	
	0 = Normal
	1 = Invert horizontal axis
	2 = Invert vertical axis
	3 = Invert both axis locations
	For a bargraph 1 = Invert , 0 = Non Invert
	Example:
	`SEND_COMMAND Panel,"'^GIV-500,3'"`
	Inverts the joystick axis origin to the bottom right corner.

^GLH
Change the bargraph upper limit.
	Syntax:
	`"'^GLH-<vt addr range>,<bargraph hi>'"`
	Variable:
	variable text address range = 1 - 4000.
	bargraph limit range = 1 - 65535 (*bargraph upper limit range*).
	Example:
	`SEND_COMMAND Panel,"'^GLH-500,1000'"`
	Changes the bargraph upper limit to 1000.

^GLL
Change the bargraph lower limit.
	Syntax:
	`"'^GLL-<vt addr range>,<bargraph low>'"`
	Variable:
	variable text address range = 1 - 4000.
	bargraph limit range = 1 - 65535 (*bargraph lower limit range*).
	Example:
	`SEND_COMMAND Panel,"'^GLL-500,150'"`
	Changes the bargraph lower limit to 150.

^GRD
Change the bargraph ramp-down time in 1/10th of a second.
	Syntax:
	`"'^GRD-<vt addr range>,<bargraph ramp down time>'"`
	Variable:
	variable text address range = 1 - 4000.
	bargraph ramp down time = In 1/10th of a second intervals.
	Example:
	`SEND_COMMAND Panel,"'^GRD-500,200'"`
	Changes the bargraph ramp down time to 20 seconds.

^GRU
Change the bargraph ramp-up time in 1/10th of a second.
	Syntax:
	`"'^GRU-<vt addr range>,<bargraph ramp up time>'"`
	Variable:
	variable text address range = 1 - 4000.
	bargraph ramp up time = In 1/10th of a second intervals.
	Example:
	`SEND_COMMAND Panel,"'^GRU-500,100'"`
	Changes the bargraph ramp up time to 10 seconds.

<table>
<tr><th colspan="2">"^" Button Commands (Cont.)</th></tr>
<tr><td>^GSC
Change the bargraph slider color or joystick cursor color.</td><td>A user can also assign the color by Name and R,G,B value (RRGGBB or RRGGBBAA).
Syntax:
"'^GSC-<vt addr range>,<color value>'"
Variable:
variable text address range = 1 - 4000.
color value = Refer to theRGB Values for all 88 Basic Colors table on page 114.
Example:
SEND_COMMAND Panel,"'^GSC-500,12'"
Changes the bargraph or joystick slider color to Yellow.</td></tr>
<tr><td>^GSN
Change the bargraph slider name or joystick cursor name.</td><td>Slider names and cursor names can be found in the TPDesign4 slider name and cursor drop-down list.
Syntax:
"'^GSN-<vt addr range>,<bargraph slider name>'"
Variable:
variable text address range = 1 - 4000.
bargraph slider name = See table below.
<table><tr><td colspan="3">Bargraph Slider Names:</td></tr><tr><td>None</td><td>Ball</td><td>Circle -L</td></tr><tr><td>Circle -M</td><td>Circle -S</td><td>Precision</td></tr><tr><td>Rectangle -L</td><td>Rectangle -M</td><td>Rectangle -S</td></tr><tr><td>Windows</td><td>Windows Active</td><td></td></tr><tr><td colspan="3">Joystick Cursor Names:</td></tr><tr><td>None</td><td>Arrow</td><td>Ball</td></tr><tr><td>Circle</td><td>Crosshairs</td><td>Gunsight</td></tr><tr><td>Hand</td><td>Metal</td><td>Spiral</td></tr><tr><td>Target</td><td>View Finder</td><td></td></tr></table>Example:
SEND_COMMAND Panel,"'^GSN-500,Ball'"
Changes the bargraph slider name or the Joystick cursor name to 'Ball'.</td></tr>
<tr><td>^ICO
Set the icon to a button.</td><td>Syntax:
"'^ICO-<vt addr range>,<button states range>,<icon index>'"
Variable:
variable text address range = 1 - 4000.
button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
icon index range = 0 - 9900 (a value of 0 is clear).
Example:
SEND_COMMAND Panel,"'^ICO-500.504&510.515,1&2,1'"
Sets the icon for On and Off states for buttons with variable text ranges of 500-504 & 510-515.</td></tr>
</table>

"^" Button Commands (Cont.)	

^JSB
Set bitmap/ picture alignment using a numeric keypad layout for those buttons with a defined address range.
	The alignment of 0 is followed by ',<left>,<top>'. The left and top coordinates are relative to the upper left corner of the button.
	Syntax:
	`"'^JSB-<vt addr range>,<button states range>,<new text alignment>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	new text alignment = Value of 1 - 9 corresponds to the following locations:
	0
	1 2 3
	4 5 6
	7 8 9
	Zero can be used for an absolute position
	Example:
	`SEND_COMMAND Panel,"'^JSB-500.504&510.515,1&2,1'"`
	Sets the off/on state picture alignment to upper left corner for those buttons with variable text ranges of 500-504 & 510-515.

^JSI
Set icon alignment using a numeric keypad layout for those buttons with a defined address range.
	The alignment of 0 is followed by ',<left>,<top>'. The left and top coordinates are relative to the upper left corner of the button.
	Syntax:
	`"'^JSI-<vt addr range>,<button states range>,<new icon alignment>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	new icon alignment = Value of 1 - 9 corresponds to the following locations:
	0
	1 2 3
	4 5 6
	7 8 9
	Zero can be used for an absolute position
	Example:
	`SEND_COMMAND Panel,"'^JSI-500.504&510.515,1&2,1'"`
	Sets the Off/On state icon alignment to upper left corner for those buttons with variable text range of 500-504 & 510-515.

"^" Button Commands (Cont.)	

^JST
Set text alignment using a numeric keypad layout for those buttons with a defined address range.
	The alignment of 0 is followed by ',<left>,<top>'. The left and top coordinates are relative to the upper left corner of the button.
	Syntax:
	`"'^JST-<vt addr range>,<button states range>,<new text alignment>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	new text alignment = Value of 1 - 9 corresponds to the following locations:
	0
	1 2 3
	4 5 6
	7 8 9
	Zero can be used for an absolute position
	Example:
	`SEND_COMMAND Panel,"'^JST-500.504&510.515,1&2,1'"`
	Sets the text alignment to the upper left corner for those buttons with variable text ranges of 500-504 & 510-515.

^MBT
Set the Mouse Button mode On for the virtual PC.
	Syntax:
	`"'^MBT-<pass data>'"`
	Variable:
	pass data:
	0 = None
	1 = Left
	2 = Right
	3 = Middle
	Example:
	`SEND COMMAND Panel,"'^MBT-1'"`
	Sets the mouse button mode to 'Left Mouse Click'.

^MDC
Turn On the 'Mouse double-click' feature for the virtual PC.
	Syntax:
	`"'^MDC'"`
	Example:
	`SEND COMMAND Panel,"'^MDC'"`
	Sets the mouse double-click for use with the virtual PC.

^SHO
Show or hide a button with a set variable text range.
	Syntax:
	`"'^SHO-<vt addr range>,<command value>'"`
	Variable:
	variable text address range = 1 - 4000.
	command value = (0= hide, 1= show).
	Example:
	`SEND_COMMAND Panel,"'^SHO-500.504&510.515,0'"`
	Hides buttons with variable text address range 500-504 & 510-515.

"^" Button Commands (Cont.)	

^SKT
Receive touch information on specified socket.
	Syntax:
	`'^SKT-<0=disable socket, greater than 1023=enable socket on specified port>`
	Only socket values equal to or greater than 1024 are valid. The panel will open up a TCP listening socket on the port specified. User or 3rd party program can connect to the panel using this port/socket number and receive touch/release/move strings. By default, the panel disables touch notifications on startup. Format of the output is:
	<Press/Release/Move>,<x-coordinate>,<y-coordinate>
	Example:
	`send_command TP, '^SKT-7425' (enables touch notifications on socket 7425) send_command TP, '^SKT-0' (disable touch notification)`

^TEC
Set the text effect color for the specified addresses/states to the specified color.
	The Text Effect is specified by name and can be found in TPD4. You can also assign the color by name or RGB value (RRGGBB or RRGGBBAA).
	Syntax:
	`"'^TEC-<vt addr range>,<button states range>,<color value>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	color value = Refer to theRGB Values for all 88 Basic Colors table on page 114.
	Example:
	`SEND_COMMAND Panel,"'^TEC-500.504&510.515,1&2,12'"`
	Sets the text effect color to Very Light Yellow on buttons with variable text 500-504 and 510-515.

^TEF
Set the text effect.
	The Text Effect is specified by name and can be found in TPD4.
	Syntax:
	`"'^TEF-<vt addr range>,<button states range>,<text effect name>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	text effect name = *Refer to theText Effects table on page 137 for a listing of text effect names.*
	Example:
	`SEND_COMMAND Panel,"'^TEF-500.504&510.515,1&2,Soft Drop Shadow 3'"`
	Sets the text effect to Soft Drop Shadow 3 for the button with variable text range 500-504 and 510-515.

^TOP Enables/disables touch output to Master	If enabled, Press/Move/Release events are sent to the Master as string events. Syntax: `"'^TOP-<state>'"` <state> is 0(disable) 1(presses/releases), 2(moves), 3(press/move/release). **Note:** Move should be used with caution. This setting can generate a significant amount of traffic to the master depending on user interaction. Example command: `'"^TOP-1"'` Example Response: "String Event: Text: Press,320,480" Example Response: "String Event: Text: Release,320,480"

"^" Button Commands (Cont.)	

^TXT
Assign a text string to those buttons with a defined address range.
	Sets Non-Unicode text.
	Syntax:
	`"'^TXT-<vt addr range>,<button states range>,<new text>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	new text = 1 - 50 ASCII characters.
	Example:
	`SEND_COMMAND Panel,"'^TXT-500.504&510.515,1&2,Test Only'"`
	Sets the On and Off state text for buttons with the variable text ranges of 500-504 & 510-515.

^UNI
Set Unicode text.
	For the ^UNI command (%UN and ^BMF command), the Unicode text is sent as ASCII-HEX nibbles.
	Syntax:
	`"'^UNI-<vt addr range>,<button states range>,<unicode text>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	unicode text = Unicode HEX value.
	Example:
	`SEND_COMMAND Panel,"'^UNI-500,1,0041'"`
	Sets the button's unicode character to 'A'.
	Note: To send the variable text 'A' in unicode to all states of the variable text button 1, (for which the character code is 0041 Hex), send the following command:
	`SEND_COMMAND TP,"'^UNI-1,0,0041'"`
	***Note**: Unicode is always represented in a HEX value. TPD4 generates (through the Text Enter Box dialog) unicode HEX values. Refer to the TPDesign4 Instruction Manual for more information.*

Text Effect Names

The following is a listing of text effects names. This list is associated with the **^TEF** command on page 135.

Text Effects	
• Glow -S	• Hard Drop Shadow 6
• Glow -M	• Hard Drop Shadow 7
• Glow -L	• Hard Drop Shadow 8
• Glow -X	• Soft Drop Shadow 1 with outline
• Outline -S	• Soft Drop Shadow 2 with outline
• Outline -M	• Soft Drop Shadow 3 with outline
• Outline -L	• Soft Drop Shadow 4 with outline
• Outline -X	• Soft Drop Shadow 5 with outline
• Soft Drop Shadow 1	• Soft Drop Shadow 6 with outline
• Soft Drop Shadow 2	• Soft Drop Shadow 7 with outline
• Soft Drop Shadow 3	• Soft Drop Shadow 8 with outline
• Soft Drop Shadow 4	• Medium Drop Shadow 1 with outline
• Soft Drop Shadow 5	• Medium Drop Shadow 2 with outline
• Soft Drop Shadow 6	• Medium Drop Shadow 3 with outline
• Soft Drop Shadow 7	• Medium Drop Shadow 4 with outline
• Soft Drop Shadow 8	• Medium Drop Shadow 5 with outline
• Medium Drop Shadow 1	• Medium Drop Shadow 6 with outline
• Medium Drop Shadow 2	• Medium Drop Shadow 7 with outline
• Medium Drop Shadow 3	• Medium Drop Shadow 8 with outline
• Medium Drop Shadow 4	• Hard Drop Shadow 1 with outline
• Medium Drop Shadow 5	• Hard Drop Shadow 2 with outline
• Medium Drop Shadow 6	• Hard Drop Shadow 3 with outline
• Medium Drop Shadow 7	• Hard Drop Shadow 4 with outline
• Medium Drop Shadow 8	• Hard Drop Shadow 5 with outline
• Hard Drop Shadow 1	• Hard Drop Shadow 6 with outline
• Hard Drop Shadow 2	• Hard Drop Shadow 7 with outline
• Hard Drop Shadow 3	• Hard Drop Shadow 8 with outline
• Hard Drop Shadow 4	
• Hard Drop Shadow 5	

Button Query Commands

Button Query commands reply back with a custom event. There will be one custom event for each button/state combination. Each query is assigned a unique custom event type. **The following example is for debug purposes only:**

```
NetLinx Example: CUSTOM_EVENT[device, Address, Custom event type]

DEFINE_EVENT
CUSTOM_EVENT[TP,529,1001]       // Text
CUSTOM_EVENT[TP,529,1002]       // Bitmap
CUSTOM_EVENT[TP,529,1003]       // Icon
CUSTOM_EVENT[TP,529,1004]       // Text Justification
CUSTOM_EVENT[TP,529,1005]       // Bitmap Justification
CUSTOM_EVENT[TP,529,1006]       // Icon Justification
CUSTOM_EVENT[TP,529,1007]       // Font
CUSTOM_EVENT[TP,529,1008]       // Text Effect Name
CUSTOM_EVENT[TP,529,1009]       // Text Effect Color
CUSTOM_EVENT[TP,529,1010]       // Word Wrap
CUSTOM_EVENT[TP,529,1011]       // ON state Border Color
CUSTOM_EVENT[TP,529,1012]       // ON state Fill Color
CUSTOM_EVENT[TP,529,1013]       // ON state Text Color
CUSTOM_EVENT[TP,529,1014]       // Border Name
```

```
CUSTOM_EVENT[TP,529,1015]      // Opacity

{
   Send_String 0,"'ButtonGet Id=',ITOA(CUSTOM.ID),' Type=',ITOA(CUSTOM.TYPE)"
   Send_String 0,"'Flag   =',ITOA(CUSTOM.FLAG)"
   Send_String 0,"'VALUE1 =',ITOA(CUSTOM.VALUE1)"
   Send_String 0,"'VALUE2 =',ITOA(CUSTOM.VALUE2)"
   Send_String 0,"'VALUE3 =',ITOA(CUSTOM.VALUE3)"
   Send_String 0,"'TEXT   =',CUSTOM.TEXT"
   Send_String 0,"'TEXT LENGTH =',ITOA(LENGTH_STRING(CUSTOM.TEXT))"
}
```

All custom events have the following 6 fields:

Custom Event Fields

Field	Description
Uint Flag	0 means text is a standard string, 1 means Unicode encoded string
slong value1	button state number
slong value2	actual length of string (this is not encoded size)
slong value3	index of first character (usually 1 or same as optional index
string text	the text from the button
text length (string encode)	button text length

These fields are populated differently for each query command. The text length (String Encode) field is not used in any command.

Button Query Commands	

?BCB
Get the current border color.
	Syntax:
	`"'?BCB-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1011:**
	Flag - zero
	Value1 - Button state number
	Value2 - Actual length of string (should be 9)
	Value3 - Zero
	Text - Hex encoded color value (ex: #000000FF)
	Text length - Color name length (should be 9)
	Example:
	`SEND COMMAND Panel,"'?BCB-529,1'"`
	Gets the button 'OFF state' border color. information.
	The result sent to the Master would be:
	`ButtonGet Id = 529 Type = 1011`
	`Flag = 0`
	`VALUE1 = 1`
	`VALUE2 = 9`
	`VALUE3 = 0`
	`TEXT = #222222FF`
	`TEXT LENGTH = 9`

?BCF
Get the current fill color.
	Syntax:
	`"'?BCF-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1012:**
	Flag - Zero
	Value1 - Button state number
	Value2 - Actual length of string (should be 9)
	Value3 - Zero
	Text - Hex encoded color value (ex: #000000FF)
	Text length - Color name length (should be 9)
	Example:
	`SEND COMMAND Panel,"'?BCF-529,1'"`
	Gets the button 'OFF state' fill color information.
	The result sent to the Master would be:
	`ButtonGet Id = 529 Type = 1012`
	`Flag = 0`
	`VALUE1 = 1`
	`VALUE2 = 9`
	`VALUE3 = 0`
	`TEXT = #FF8000FF`
	`TEXT LENGTH = 9`

Button Query Commands (Cont.)	
?BCT Get the current text color.	Syntax: "'?BCT-<vt addr range>,<button states range>'" Variable: variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). custom event type **1013:** Flag - Zero Value1 - Button state number Value2 - Actual length of string (should be 9) Value3 - Zero Text - Hex encoded color value (ex: #000000FF) Text length - Color name length (should be 9) Example: SEND COMMAND Panel,"'?BCT-529,1'" Gets the button 'OFF state' text color information. The result sent to Master would be: ButtonGet Id = 529 Type = 1013 Flag = 0 VALUE1 = 1 VALUE2 = 9 VALUE3 = 0 TEXT = #FFFFFEFF TEXT LENGTH = 9
?BMP Get the current bitmap name.	Syntax: "'?BMP-<vt addr range>,<button states range>'" Variable: variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). custom event type **1002:** Flag - Zero Value1 - Button state number Value2 - Actual length of string Value3 - Zero Text - String that represents the bitmap name Text length - Bitmap name text length (should be 9) Example: SEND COMMAND Panel,"'?BMP-529,1'" Gets the button 'OFF state' bitmap information. The result sent to the Master would be: ButtonGet Id = 529 Type = 1002 Flag = 0 VALUE1 = 1 VALUE2 = 9 VALUE3 = 0 TEXT = Buggs.png TEXT LENGTH = 9

Button Query Commands (Cont.)	
?BOP Get the overall button opacity.	Syntax: "'?BOP-<vt addr range>,<button states range>'" Variable: variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). custom event type **1015:** Flag - Zero Value1 - Button state number Value2 - Opacity Value3 - Zero Text - Blank Text length - Zero Example: SEND COMMAND Panel,"'?BOP-529,1'" Gets the button 'OFF state' opacity information. The result sent to the Master would be: ButtonGet Id = 529 Type = 1015 Flag = 0 VALUE1 = 1 VALUE2 = 200 VALUE3 = 0 TEXT = TEXT LENGTH = 0
?BRD Get the current border name.	Syntax: "'?BRD-<vt addr range>,<button states range>'" Variable: variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). custom event type **1014:** Flag - Zero Value1 - Button state number Value2 - Actual length of string Value3 - Zero Text - String that represents border name Text length - Border name length Example: SEND COMMAND Panel,"'?BRD-529,1'" Gets the button 'OFF state' border information. The result sent to the Master would be: ButtonGet Id = 529 Type = 1014 Flag = 0 VALUE1 = 1 VALUE2 = 22 VALUE3 = 0 TEXT = Double Bevel Raised -L TEXT LENGTH = 22

Button Query Commands (Cont.)	
?BWW Get the current word wrap flag status.	Syntax: "'?BWW-<vt addr range>,<button states range>'" Variable: variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). custom event type **1010:** Flag - Zero Value1 - Button state number Value2 - 0 = no word wrap, 1 = word wrap Value3 - Zero Text - Blank Text length - Zero Example: SEND COMMAND Panel,"'?BWW-529,1'" Gets the button 'OFF state' word wrap flag status information. The result sent to the Master would be: ButtonGet Id = 529 Type = 1010 Flag = 0 VALUE1 = 1 VALUE2 = 1 VALUE3 = 0 TEXT = TEXT LENGTH = 0
?FON Get the current font index.	Syntax: "'?FON-<vt addr range>,<button states range>'" Variable: variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). custom event type **1007:** Flag - Zero Value1 - Button state number Value2 - Font index Value3 - Zero Text - Blank Text length - Zero Example: SEND COMMAND Panel,"'?FON-529,1'" Gets the button 'OFF state' font type index information. The result sent to the Master would be: ButtonGet Id = 529 Type = 1007 Flag = 0 VALUE1 = 1 VALUE2 = 72 VALUE3 = 0 TEXT = TEXT LENGTH = 0

Button Query Commands (Cont.)	

?ICO
Get the current icon index.
	Syntax:
	`"'?ICO-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1003:**
	Flag - Zero
	Value1 - Button state number
	Value2 - Icon Index
	Value3 - Zero
	Text - Blank
	Text length - Zero
	Example:
	`SEND COMMAND Panel,"'?ICO-529,1&2'"`
	Gets the button 'OFF state' icon index information.
	The result sent to the Master would be:
	`ButtonGet Id = 529 Type = 1003`
	`Flag = 0`
	`VALUE1 = 2`
	`VALUE2 = 12`
	`VALUE3 = 0`
	`TEXT =`
	`TEXT LENGTH = 0`

?JSB
Get the current bitmap justification.
	Syntax:
	`"'?JSB-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1005:**
	Flag - Zero
	Value1 - Button state number
	Value2 - 1 - 9 justify
	Value3 - Zero
	Text - Blank
	Text length - Zero
	Example:
	`SEND COMMAND Panel,"'?JSB-529,1'"`
	Gets the button 'OFF state' bitmap justification information.
	The result sent to the Master would be:
	`ButtonGet Id = 529 Type = 1005`
	`Flag = 0`
	`VALUE1 = 1`
	`VALUE2 = 5`
	`VALUE3 = 0`
	`TEXT =`
	`TEXT LENGTH = 0`

Button Query Commands (Cont.)	
?JSI Get the current icon justification.	Syntax: "'?JSI-<vt addr range>,<button states range>'" Variable: variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). custom event type **1006:** Flag - Zero Value1 - Button state number Value2 - 1 - 9 justify Value3 - Zero Text - Blank Text length - Zero Example: SEND COMMAND Panel,"'?JSI-529,1'" Gets the button 'OFF state' icon justification information. The result sent to the Master would be: ButtonGet Id = 529 Type = 1006 Flag = 0 VALUE1 = 1 VALUE2 = 6 VALUE3 = 0 TEXT = TEXT LENGTH = 0
?JST Get the current text justification.	Syntax: "'?JST-<vt addr range>,<button states range>'" Variable: variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). custom event type **1004:** Flag - Zero Value1 - Button state number Value2 - 1 - 9 justify Value3 - Zero Text - Blank Text length - Zero Example: SEND COMMAND Panel,"'?JST-529,1'" Gets the button 'OFF state' text justification information. The result sent to the Master would be: ButtonGet Id = 529 Type = 1004 Flag = 0 VALUE1 = 1 VALUE2 = 1 VALUE3 = 0 TEXT = TEXT LENGTH = 0

Button Query Commands (Cont.)	
?TEC Get the current text effect color.	Syntax: "'?TEC-<vt addr range>,<button states range>'" Variable: variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). custom event type **1009:** Flag - Zero Value1 - Button state number Value2 - Actual length of string (should be 9) Value3 - Zero Text - Hex encoded color value (ex: #000000FF) Text length - Color name length (should be 9) Example: SEND COMMAND Panel,"'?TEC-529,1'" Gets the button 'OFF state' text effect color information. The result sent to the Master would be: ButtonGet Id = 529 Type = 1009 Flag = 0 VALUE1 = 1 VALUE2 = 9 VALUE3 = 0 TEXT = #5088F2AE TEXT LENGTH = 9
?TEF Get the current text effect name.	Syntax: "'?TEF-<vt addr range>,<button states range>'" Variable: variable text address range = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). custom event type **1008:** Flag - Zero Value1 - Button state number Value2 - Actual length of string Value3 - Zero Text - String that represents the text effect name Text length - Text effect name length Example: SEND COMMAND Panel,"'?TEF-529,1'" Gets the button 'OFF state' text effect name information. The result sent to the Master would be: ButtonGet Id = 529 Type = 1008 Flag = 0 VALUE1 = 1 VALUE2 = 18 VALUE3 = 0 TEXT = Hard Drop Shadow 3 TEXT LENGTH = 18

Button Query Commands (Cont.)	

?TXT
Get the current text information.
	Syntax:
	`"'?TXT-<vt addr range>,<button states range>,<optional index>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	optional index = This is used if a string was too long to get back in one command. The reply will start at this index.
	custom event type **1001:**
	Flag - Zero
	Value1 - Button state number
	Value2 - Actual length of string
	Value3 - Index
	Text - Text from the button
	Text length - Button text length
	Example:
	`SEND COMMAND Panel,"'?TXT-529,1'"`
	Gets the button 'OFF state' text information.
	The result sent to the Master would be:
	`ButtonGet Id = 529 Type = 1001`
	`Flag = 0`
	`VALUE1 = 1`
	`VALUE2 = 14`
	`VALUE3 = 1`
	`TEXT = This is a test`
	`TEXT LENGTH = 14`

Panel Runtime Operations

Serial Commands are used in the AxcessX Terminal Emulator mode. These commands are case insensitive.

Panel Runtime Operation Commands	

ABEEP
Output a single beep even if beep is Off.
	Syntax:
	`"'ABEEP'"`
	Example:
	`SEND COMMAND Panel,"'ABEEP'"`
	Outputs a beep of duration 1 beep even if beep is Off.

ADBEEP
Output a double beep even if beep is Off.
	Syntax:
	`"'ADBEEP'"`
	Example:
	`SEND COMMAND Panel,"'ADBEEP'"`
	Outputs a double beep even if beep is Off.

@AKB
Pop up the keyboard icon and initialize the text string to that specified.
	Keyboard string is set to null on power up and is stored until power is lost. The Prompt Text is optional.
	Syntax:
	`"'@AKB-<initial text>;<prompt text>'"`
	Variables:
	`initial text = 1 - 50 ASCII characters.`
	`prompt text = 1 - 50 ASCII characters.`
	Example:
	`SEND COMMAND Panel,"'@AKB-Texas;Enter State'"`
	Pops up the Keyboard and initializes the text string 'Texas' with prompt text 'Enter State'.

Panel Runtime Operation Commands (Cont.)	

AKEYB
Pop up the keyboard icon and initialize the text string to that specified.
	Keyboard string is set to null on power up and is stored until power is lost.
	Syntax:
	`"'AKEYB-<initial text>'"`
	Variables:
	`initial text = 1 - 50 ASCII characters.`
	Example:
	`SEND COMMAND Panel,"'AKEYB-This is a Test'"`
	Pops up the Keyboard and initializes the text string 'This is a Test'.

AKEYP
Pop up the keypad icon and initialize the text string to that specified.
	The keypad string is set to null on power up and is stored until power is lost.
	Syntax:
	`"'AKEYP-<number string>'"`
	Variables:
	`number string = 0 - 9999.`
	Example:
	`SEND COMMAND Panel,"'AKEP-12345'"`
	Pops up the Keypad and initializes the text string '12345'.

AKEYR
Remove the Keyboard/ Keypad.
	Remove keyboard or keypad that was displayed using 'AKEYB', 'AKEYP', 'PKEYP', @AKB, @AKP, @PKP, @EKP, or @TKP commands.
	Syntax:
	`"'AKEYR'"`
	Example:
	`SEND COMMAND Panel,"'AKEYR'"`
	Removes the Keyboard/Keypad.

@AKP
Pop up the keypad icon and initialize the text string to that specified.
	Keypad string is set to null on power up and is stored until power is lost. The Prompt Text is optional.
	Syntax:
	`"'@AKP-<initial text>;<prompt text>'"`
	Variables:
	`initial text = 1 - 50 ASCII characters.`
	`prompt text = 1 - 50 ASCII characters.`
	Example:
	`SEND COMMAND Panel,"'@AKP-12345678;ENTER PASSWORD'"`
	Pops up the Keypad and initializes the text string '12345678' with prompt text 'ENTER PASSWORD'.

@AKR
Remove the Keyboard/ Keypad.
	Remove keyboard or keypad that was displayed using 'AKEYB', 'AKEYP', 'PKEYP', @AKB, @AKP, @PKP, @EKP, or @TKP commands.
	Syntax:
	`"'@AKR'"`
	Example:
	`SEND COMMAND Panel,"'@AKR'"`
	Removes the Keyboard/Keypad.

BEEP
Output a beep.
	Syntax:
	`"'BEEP'"`
	Example:
	`SEND COMMAND Panel,"'BEEP'"`
	Outputs a beep.

Panel Runtime Operation Commands (Cont.)	
BRIT Set the panel brightness.	Syntax: "'BRIT-<brightness level>'" Variable: brightness level = 0 - 100. Example: SEND COMMAND Panel,"'BRIT-50'" Sets the brightness level to 50.
@BRT Set the panel brightness.	Syntax: "'@BRT-<brightness level>'" Variable: brightness level = 0 - 100. Example: SEND COMMAND Panel,"'@BRT-70'" Sets the brightness level to 70.
DBEEP Output a double beep.	Syntax: "'DBEEP'" Example: SEND COMMAND Panel,"'DBEEP'" Outputs a double beep.
@EKP Extend the Keypad.	Pops up the keypad icon and initializes the text string to that specified. The Prompt Text is optional. Syntax: "'@EKP-<initial text>;<prompt text>'" Variables: initial text = 1 - 50 ASCII characters. prompt text = 1 - 50 ASCII characters. Example: SEND COMMAND Panel,"'@EKP-33333333;Enter Password'" Pops up the Keypad and initializes the text string '33333333' with prompt text 'Enter Password'.
PKEYP Present a private keypad.	Pops up the keypad icon and initializes the text string to that specified. Keypad displays a '*' instead of the numbers typed. The Prompt Text is optional. Syntax: "'PKEYP-<initial text>'" Variables: initial text = 1 - 50 ASCII characters. Example: SEND COMMAND Panel,"'PKEYP-123456789'" Pops up the Keypad and initializes the text string '123456789' in '*'.
@PKP Present a private keypad.	Pops up the keypad icon and initializes the text string to that specified. Keypad displays a '*' instead of the numbers typed. The Prompt Text is optional. Syntax: "'@PKP-<initial text>;<prompt text>'" Variables: initial text = 1 - 50 ASCII characters. prompt text = 1 - 50 ASCII characters. Example: SEND COMMAND Panel,"'@PKP-1234567;ENTER PASSWORD'" Pops up the Keypad and initializes the text string 'ENTER PASSWORD' in '*'.

Panel Runtime Operation Commands (Cont.)	

SETUP
Send panel to SETUP page.
	Syntax:
	`"'SETUP'"`
	Example:
	`SEND COMMAND Panel,"'SETUP'"`
	Sends the panel to the Setup Page.

SHUTDOWN
Shut down the batteries providing power to the panel.
	Syntax:
	`"'SHUTDOWN'"`
	Example:
	`SEND COMMAND Panel,"'SHUTDOWN'"`
	Shuts-down the batteries feeding power to the panel. This function saves the battery from discharging.

SLEEP
Force the panel into screen saver mode.
	Syntax:
	`"'SLEEP'"`
	Example:
	`SEND COMMAND Panel,"'SLEEP'"`
	Forces the panel into screen saver mode.

@SOU
Play a sound file.
	Syntax:
	`"'@SOU-<sound name>'"`
	Variables:
	`sound name = Name of the sound file. Supported sound file formats are: WAV & MP3.`
	Example:
	`SEND COMMAND Panel,"'@SOU-Music.wav'"`
	Plays the 'Music.wav' file.

@TKP
Present a telephone keypad.
	Pops up the keypad icon and initializes the text string to that specified. The Prompt Text is optional.
	Syntax:
	`"'@TKP-<initial text>;<prompt text>'"`
	Variables:
	`initial text = 1 - 50 ASCII characters.`
	`prompt text = 1 - 50 ASCII characters.`
	Example:
	`SEND COMMAND Panel,"'@TKP-999.222.1211;Enter Phone Number'"`
	Pops-up the Keypad and initializes the text string '999.222.1211' with prompt text 'Enter Phone Number'.

TPAGEON
Turn On page tracking.
	This command turns On page tracking, whereby when the page or popups change, a string is sent to the Master. This string may be captured with a CREATE_BUFFER command for one panel and sent directly to another panel.
	Syntax:
	`"'TPAGEON'"`
	Example:
	`SEND COMMAND Panel,"'TPAGEON'"`
	Turns On page tracking.

TPAGEOFF
Turn Off page tracking.
	Syntax:
	`"'TPAGEOFF'"`
	Example:
	`SEND COMMAND Panel,"'TPAGEOFF'"`
	Turns Off page tracking.

Panel Runtime Operation Commands (Cont.)	

@VKB
Popup the virtual keyboard.
	Syntax:
	`"'@VKB'"`
	Example:
	`SEND COMMAND Panel,"'@VKB'"`
	Pops-up the virtual keyboard.

WAKE
Force the panel out of screen saver mode.
	Syntax:
	`"'WAKE'"`
	Example:
	`SEND COMMAND Panel,"'WAKE'"`
	Forces the panel out of the screen saver mode.

Input Commands

These Send Commands are case insensitive.

Input Commands	

^CAL
Put panel in calibration mode.
	Syntax:
	`"'^CAL'"`
	Example:
	`SEND COMMAND Panel,"'^CAL'"`
	Puts the panel in calibration mode.

^KPS
Set the keyboard passthru.
	Syntax:
	`"'^KPS-<pass data>'"`
	Variables:
	pass data:
	<blank/empty> = Disables the keyboard.
	0 = Pass data to G4 application (default). This can be used with VPC or text areas.
	1 - 4 = Not used.
	5 = Sends out data to the Master.
	Example:
	`SEND COMMAND Panel,"'^KPS-5'"`
	Sets the keyboard passthru to the Master. Option 5 sends keystrokes directly to the Master via the Send Output String mechanism. This process sends a virtual keystroke command (^VKS) to the Master.
	Example 2:
	`SEND COMMAND Panel,"'^KPS-0'"`
	Disables the keyboard passthru to the Master.
	The following point defines how the parameters within this command work:
	• Accepts keystrokes from any of these sources: attached USB keyboard or Virtual keyboard.

Input Commands (Cont.)	

^SLT
Send a command to a given slot.
	These commands are directed at the video card subsystems. Slot commands contain a series of name/value pairs separated by commas. These commands are case insensitive.
	Syntax:
	`"'^SLT-<slot number>,<slot command>'"`
	Variables:
	slot number = 1 - 3 (each of these options corresponds to an on-board slot position where the related components reside.)
	Slot 1= Composite Video (common to both 1200-V and VG-Series)
	Slot 2 = RGB Component Video (only available on the VG-Series)
	Slot 3 = Streaming MPEG Video (only available on the VG-Series)
	slot command = *see list below*:
	Interlace = <0 or 1> where:
	0 = Deselects Interlace and **1** = Selects Interlace
	Sharpness = < 0 or 1> where:
	0 = Disables Sharpness and **1** = Enables Sharpness
	SyncOn Green = < 0 or 1> where
	0 = Disables SyncOnGreen and **1**= Enables SyncOnGreen
	Example:
	`SEND_COMMAND TP,"'^SLT-1,Interlace=1'"`
	Enables Interlace on the incoming Composite video signal.
	`SEND_COMMAND TP,"'^SLT-3,Sharpness=1'"`
	Enables sharpness on the incoming MPEG video stream (if available).
	`SEND_COMMAND TP,"'^SLT-2,SyncOnGreen=1'"`
	Enables the SynOnGreen feature for the incoming RGB signal (if available).

^VKS
Send one or more virtual keystrokes to the G4 application.
	Key presses and key releases are not distinguished except in the case of CTRL, ALT, and SHIFT.
	Refer to the Embedded Codes table on page 152 that define special characters which can be included with the string but may not be represented by the ASCII character set.
	Syntax:
	`"'^VKS-<string>'"`
	Variable:
	string = Only 1 string per command/only one stroke per command.
	Example:
	`SEND COMMAND Panel,"'^VKS-'8"`
	Sends out the keystroke 'backspace' to the G4 application.

Embedded Codes

The following is a list of G4 compatible embedded codes:

Embedded Codes		
Decimal numbers	Hexidecimal values	Virtual keystroke
8	($08)	Backspace
13	($0D)	Enter
27	($1B)	ESC
128	($80)	CTRL key down
129	($81)	ALT key down
130	($82)	Shift key down
131	($83)	F1
132	($84)	F2
133	($85)	F3
134	($86)	F4
135	($87)	F5
136	($88)	F6
137	($89)	F7
138	($8A)	F8
139	($8B)	F9
140	($8C)	F10
141	($8D)	F11
142	($8E)	F12
143	($8F)	Num Lock
144	($90)	Caps Lock
145	($91)	Insert
146	($92)	Delete
147	($93)	Home
148	($94)	End
149	($95)	Page Up
150	($96)	Page Down
151	($97)	Scroll Lock
152	($98)	Pause
153	($99)	Break
154	($9A)	Print Screen
155	($9B)	SYSRQ
156	($9C)	Tab
157	($9D)	Windows
158	($9E)	Menu
159	($9F)	Up Arrow
160	($A0)	Down Arrow
161	($A1)	Left Arrow
162	($A2)	Right Arrow
192	($C0)	CTRL key up
193	($C1)	ALT key up
194	($C2)	Shift key up

Panel Setup Commands

These commands are case insensitive.

Panel Setup Commands	
^MUT Set the panel mute state.	Syntax: "'^MUT-<mute state>'" Variable: mute state= 0 = Mute Off and 1 = Mute On. Example: SEND_COMMAND Panel,"'^MUT-1'" Sets the panel's master volume to mute.
@PWD Set the page flip password.	@PWD sets the level 1 password only. Syntax: "'@PWD-<page flip password>'" Variables: page flip password = 1 - 50 ASCII characters. Example: SEND COMMAND Panel,"'@PWD-Main'" Sets the page flip password to 'Main'.
^PWD Set the page flip password.	Password level is required and must be 1 - 4. Syntax: "'^PWD-<password level>,<page flip password>'" Variables: password level = 1 - 4. page flip password = 1 - 50 ASCII characters. Example: SEND COMMAND Panel,"'^PWD-1,Main'" Sets the page flip password on Password Level 1 to 'Main'.
@RPP Reset the protected password.	@RPP resets the protected password to its default (1988). Syntax: "'@RPP'" Example: SEND COMMAND Panel,"'@RPP'" Resets the protected Setup page password to '1988'.
^VOL Set the panel volume.	Syntax: "'^VOL-<volume level>'" Variable: volume level = 0 - 100. ***100 is maximum volume setting.*** Example: SEND_COMMAND Panel,"'^VOL-50'" Set the panel volume to 50.

Dynamic Image Commands

The following table describes Dynamic Image Commands.

Dynamic Image Commands	

^BBR
Set the bitmap of a button to use a particular resource.
	Syntax:
	`"'^BBR-<vt addr range>,<button states range>,<resource name>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	resource name = 1 - 50 ASCII characters.
	Example:
	`SEND_COMMAND Panel,"'^BBR-700,1,Sports_Image'"`
	Sets the resource name of the button to 'Sports_Image'.

^RAF
Add new resources.
	Adds any and all resource parameters by sending embedded codes and data.
	Since the embedded codes are preceded by a '%' character, any '%' character contained in the URL must be escaped with a second '%' character (see example).
	The file name field (indicated by a **%F** embedded code) may contain special escape sequences as shown in the *^RAF, ^RMF - Embedded Codes* table below.
	Syntax:
	`"'^RAF-<resource name>,<data>'"`
	Variables:
	• resource name = 1 - 50 ASCII characters.
	• data = Refers to the embedded codes, see the *^RAF, ^RMF - Embedded Codes* section on page 155.
	Example:
	`SEND_COMMAND Panel,"'^RAF-New Image,%P0%HAMX.COM%ALab/Test%%5Ffile%Ftest.jpg'"`
	Adds a new resource.
	• The resource name is 'New Image'
	• %P (protocol) is an HTTP
	• %H (host name) is ***AMX.COM***
	• %A (file path) is ***Lab/Test_file***
	• %F (file name) is ***test.jpg***.
	Note that the **%%5F** in the file path is actually encoded as **%5F**.

^RFR
Force a refresh for a given resource.
	Syntax:
	`"'^RFR-<resource name>'"`
	Variable:
	resource name = 1 - 50 ASCII characters.
	Example:
	`SEND_COMMAND Panel,"'^RFR-Sports_Image'"`
	Forces a refresh on 'Sports_Image'.

Dynamic Image Commands (Cont.)	

^RMF
Modify an existing resource.
	Modifies any and all resource parameters by sending embedded codes and data.
	Since the embedded codes are preceded by a '%' character, any '%' character contained in the URL must be escaped with a second '%' character (see example).
	The file name field (indicated by a **%F** embedded code) may contain special escape sequences as shown in the *^RAF, ^RMF - Embedded Codes* section on page 155.
	Syntax:
	`"'^RMF-<resource name>,<data>'"`
	Variables:
	• resource name = 1 - 50 ASCII characters
	• data = Refers to the embedded codes, see the *^RAF, ^RMF - Embedded Codes* section on page 155.
	Example:
	`SEND_COMMAND Panel,"'^RMF-Sports_Image,%ALab%%5FTest/Images%Ftest.jpg'"`
	Changes the resource 'Sports_Image' file name to 'test.jpg' and the path to 'Lab_Test/Images'.
	Note that the **%%5F** in the file path is actually encoded as **%5F**.

^RSR
Change the refresh rate for a given resource.
	Syntax:
	`"'^RSR-<resource name>,<refresh rate>'"`
	Variable:
	resource name = 1 - 50 ASCII characters.
	refresh rate = Measured in seconds.
	Example:
	`SEND_COMMAND Panel,"'^RSR-Sports_Image,5'"`
	Sets the refresh rate to 5 seconds for the given resource ('Sports_Image').

^RAF, ^RMF - Embedded Codes

The ^RAF and ^RMF commands add and modify any and all resource parameters by sending embedded codes and data:

```
"'^RAF-<resource name>,<data>'"
"'^RMF-<resource name>,<data>'"
```

The <data> variable uses the embedded codes described in the following table:

^RAF, ^RMF - Embedded Codes		
Parameter	Embedded Code	Description
protocol	'%P <0-1>'	Set protocol. HTTP (0) or FTP (1).
user	'%U <user>'	Set Username for authentication.
password	'%S <password>'	Set Password for authentication.
host	'%H <host>'	Set Host Name (fully qualified DNS or IP Address).
file	'%F <file>'	Full path to the location of the file or program that will return the resource. The path must be a valid HTTP URL minus the protocol and host. The only exception to this is the inclusion of special escape sequences and in the case of FTP protocol, regular expressions.
path	'%A <path>'	Set Directory path. The path must be a valid HTTP URL minus the protocol, host and filename. The only exception to this is the inclusion of special escape sequences and in the case of FTP protocol, regular expressions.

^RAF, ^RMF - Embedded Codes (Cont.)		
Parameter	Embedded Code	Description
refresh	'%R <refresh 1-65535>'	The number of seconds between refreshes in which the resource is downloaded again. Refreshing a resource causes the button displaying that resource to refresh also. The default value is 0 (only download the resource once).
newest	'%N <0-1>'	Set the newest file. A value of 1 means that only the most recent file matching the pattern is downloaded. ***Note**: The 'newest file' option only applies to FTP Dynamic Images, and only those that have pattern matching as part of their filename. Neither 'newest file' nor pattern matching apply to HTTP Dynamic Images.* *When set, the panel will first pull a list of files matching the given pattern from the specified FTP server and path. The timestamps of the items in the list will be compared, with the newest one being displayed on the panel. This is useful for source devices that place a uniquely named still image in a folder at constant intervals, allowing the panel always to display the most recent one.*
preserve	'%V <0-1>'	Set the value of the preserve flag. Default is 0. Currently preserve has no function.

Escape Sequences

The ^RAF and ^RMF commands support the replacement of any special escape sequences in the filename (specified by the **%F** embedded code) with the corresponding data obtained from the system as outlined in the table below:

Escape Sequences	
Sequence	Panel Information
$DV	Device Number
$SY	System Number
$IP	IP Address
$HN	Host Name
$MC	Mac Address
$ID	Neuron ID (*Only supported on panels that use ICSNet; ignored on all other panels*)
$PX	X resolution of current panel mode/file
$PY	Y resolution of current panel mode/file
$ST	Current state
$AC	Address code
$AP	Address port
$CC	Channel code
$CP	Channel port
$LC	Level code
$LP	Level port
$BX	X Resolution of Current button
$BY	Y Resolution of Current button
$BN	Name of Button

For instance, **http://www.amx.com/img.asp?device=$DV**

would become

http://www.amx.com/img.asp?device=10001.

Appendix

Text Formatting Codes for Bargraphs/Joysticks

Text formatting codes for bargraphs provide a mechanism to allow a portion of a bargraphs text to be dynamically provided information about the current status of the level (multistate and traditional). These codes would be entered into the text field along with any other text.

The following is a code list used for bargraphs:

Bargraph Text Code Inputs		
Code	Bargraph	Multi-State Bargraph
$P	Display the current percentage of the bargraph (derived from the Adjusted Level Value as it falls between the Range Values)	Display the current percentage of the bargraph (derived from the Adjusted Level Value as it falls between the Range Values)
$V	Raw Level Value	Raw Level Value
$L	Range Low Value	Range Low Value
$H	Range High Value	Range High Value
$S	N/A	Current State
$A	Adjusted Level Value (Range Low Value subtracted from the Raw Level Value)	Adjusted Level Value (Range Low Value subtracted from the Raw Level Value)
$R	Low Range subtracted from the High Range	Low Range subtracted from the High Range
$$	Dollar sign	Dollar sign

Buy changing the text on a button (via a VT command) you can modify the codes on a button. When one of the Text Formatting Codes is encountered by the firmware it is replaced with the correct value. These values are derived from the following operations:

Formatting Code Operations	
Code	Operation
$P	(Current Value - Range Low Value / Range High Value - Range Low Value) x 100
$V	Current Level Value
$L	Range Low Value
$H	Range High Value
$S	Current State (if regular bargraph then resolves to nothing)
$A	Current Value - Range Low Value
$R	Range High Value - Range Low Value

Given a current raw level value of 532, a range low value of 500 and a high range value of 600 the following text formatting codes would yield the following strings as shown in the table below:

Example	
Format	Display
$P%	32%
$A out of $R	32 out of 100
$A of 0 - $R	32 of 0 - 100
$V of $L - $H	532 of 500 - 600

Text Area Input Masking

Text Area Input Masking can be used to limit the allowed/correct characters that are entered into a text area. For example, in working with a zip code, a user could limit the entry to a max length of only 5 characters but, with input masking, you could limit them to 5 mandatory numerical digits and 4 optional numerical digits. A possible use for this feature is to enter information into form fields. The purpose of this feature is to:

- Force you to use correct type of characters (i.e. numbers vs. characters)
- Limit the number of characters in a text area
- Suggest proper format with fixed characters
- Right to Left
- Required or Optional
- Change/Force a Case
- Create multiple logical fields
- Specify range of characters/number for each field

With this feature, it is NOT necessary to:

- Limit you to a choice of selections
- Handle complex input tasks such as names, days of the weeks or months by name
- Perform complex validation such as Subnet Mask validation

Input Mask Character Types

These character types define what information is allowed to be entered in any specific instance. The following table lists what characters in an input mask will define what characters are allowed in any given position.

Character Types	
Character	Masking Rule
0	Digit (0 to 9, entry required, plus [+] and minus [-] signs not allowed)
9	Digit or space (entry not required, plus and minus signs not allowed)
#	Digit or space (entry not required; plus and minus signs allowed)
L	Letter (A to Z, entry required)
?	Letter (A to Z, entry optional)
A	Letter or digit (entry required)
a	Letter or digit (entry optional)
&	Any character or a space (entry required)
C	Any character or a space (entry optional)

The number of the above characters used determines the length of the input masking box. Example: 0000 requires an entry, requires digits to be used, and allows only 4 characters to be entered/used.

Refer to the following Send Commands for more detailed information:

- `^BIM` - Sets the input mask for the specified addresses. (see the *^BIM* section on page 121).
- `^BMF` subcommand **`%MK`** - sets the input mask of a text area (see the *^BMF* section on page 123).

Input Mask Ranges

These ranges allow a user to specify the minimum and maximum numeric value for a field.
Only one range is allowed per field. Using a range implies a numeric entry ONLY.

Input Mask Ranges	
Character	Meaning
[	Start range
]	End range
|	Range Separator

An example from the above table:

[0|255] This allows a user to enter a value from 0 to 255.

Input Mask Next Field Characters

These characters allow you to specify a list of characters that cause the keyboard to move the focus to the next field when pressed instead of inserting the text into the text area.

Input Mask Next Field Char	
Character	Meaning
{	Start Next Field List
}	End Next Field List

An example from the above table:

{.} or {:} or {.:} Tells the system that after a user hits any of these keys, proceed to the next text area input box.

Input mask operations

Input Mask Operators change the behavior of the field in the following way:

Input Mask Operators	
Character	Meaning
<	Forces all characters to be converted to lowercase
>	Forces all characters to be converted to uppercase
^	Sets the overflow flag for this field

Input mask literals

To define a literal character, enter any character, other than those shown in the above table *(including spaces, and symbols)*. A back-slash ('\') causes the character that follows it to be displayed as the literal character. For example, **\A** is displayed just as the letter **A**. To define one of the following characters as a literal character, precede that character with a back-slash. Text entry operation using Input Masks.

A keyboard entry using normal text entry is straightforward. However, once an input mask is applied, the behavior of the keyboard needs to change to accommodate the input mask's requirement. When working with masks, any literal characters in the mask will be "skipped" by any cursor movement including cursor keys, backspace, and delete.

When operating with a mask, the mask should be displayed with placeholders. The "-" character should display where you should enter a character. The arrow keys will move between the "-" characters and allow you to replace them. The text entry code operates as if it is in the overwrite mode. If the cursor is positioned on a character already entered and you type in a new (and valid) character, the new character replace the old character. There is no shifting of characters.

When working with ranges specified by the [] mask, the keyboard allows you to enter a number between the values listed in the ranges. If a user enters a value that is larger than the max, the maximum number of right-most characters is used to create a new, acceptable value.

- **Example 1**: If you type "125" into a field accepting 0-100, then the values displayed will be "1", "12", "25".
- **Example2**: If the max for the filed was 20, then the values displayed will be "1", "12", "5".

When data overflows from a numerical field, the overflow value is added to the previous field on the chain, **if** the overflow character was specified. In the above example, if the overflow flag was set, the first example will place the "1" into the previous logical field and the second example will place "12" in the previous logical field. If the overflow filed already contains a value, the new value will be inserted to the right of the current characters and the overflow field will be evaluated. Overflow continues to work until a filed with no overflow value is set or there are no more fields left (i.e. reached first field).

If a character is typed and that characters appear in the Next Field list, the keyboard should move the focus to the next field. For example, when entering time, a **":"** is used as a next field character. If you hit "1:2", the 1 is entered in the current field (hours) and then the focus is moved to the next field and 2 is entered in that field.

When entering time in a 12-hour format, entry of AM and PM is required. Instead of adding AM/PM to the input mask specification, the AM/PM should be handled within the NetLinx code. This allows a programmer to show/hide and provide discrete feedback for AM and PM.

Input mask output examples

The following are some common input masking examples:

Output Examples		
Common Name	Input Mask	Input
IP Address Quad	[0|255]{.}	Any value from 0 to 255
Hour	[1|12]{:}	Any value from 1 to 12
Minute/Second	[0|59]{:}	Any value from 0 to 59
Frames	[0|29]{:}	Any value from 0 to 29
Phone Numbers	(999) 000-0000	(555) 555-5555
Zip Code	00000-9999	75082-4567

URL Resources

A URL can be broken into several parts. For example: the URL *http://www.amx.com/company-info-home.asp*. This URL indicates that the protocol in use is **http** (HyperText Transport Protocol) and that the information resides on a host machine named **www.amx.com**. The image on that host machine is given an assignment (*by the program*) name of **company-info-home.asp** *(Active Server Page)*.

The exact meaning of this name on the host machine is both protocol dependent and host dependent. The information normally resides in a file, but it could be generated dynamically. This component of the URL is called the file component, even though the information is not necessarily in a file.

A URL can optionally specify a port, which is the port number to which the TCP connection is made on the remote host machine. If the port is not specified, the default port for the protocol is used instead. For example, the default port for http is 80. An alternative port could be specified as: http://www.amx.com:8080/company-info-home.asp.

Any legal HTTP syntax can be used.

Special Escape Sequences

The system has only a limited knowledge of URL formats in that it transparently passes the URL information onto the server for translation. A user can then pass any parameters to the server side programs such as CGI scripts or active server pages. However; the system will parse the URL looking for special escape codes. When it finds an escape code it replaces that code with a particular piece of panel, button, or state information. For example, "http://www.amx.com/img.asp?device=$DV" would become "http://www.amx.com/img.asp?device=10001". Other used escape sequences include:

Escape Sequences

Sequence	Panel Information
$DV	Device Number
$SY	System Number
$IP	IP Address
$HN	Host Name
$MC	Mac Address
$ID	Neuron ID
$PX	X Resolution of current panel mode/file
$PY	Y Resolution of current panel mode/file
$BX	X Resolution of current button
$BY	Y Resolution of current button
$BN	Name of button
$ST	Current state
$AC	Address Code
$AP	Address Port
$CC	Channel Code
$CP	Channel Port
$LC	Level Code
$LP	Level Port

Troubleshooting

Overview

This section describes the solutions to possible hardware/firmware issues that could arise during the common operation of a Modero touch panel.

Troubleshooting Information	
Symptom	Solution
Manifest.xma can not be found. An error occurs when sending a file to a G4 panel.	• Manifest.xma is the file that contains the listing for all the files. If you see this error again, before attempting to send the file, uncheck the Smart Transfer box. It may be necessary do a Full Clean.
When using G4 WebControl to communicate with a target panel, a VNC Server dialog appears on my screen.	• During a WebControl connection to a target panel you are prompted with a G4 Authentication dialog which asks you to enter the assigned password for the panel (before gaining access). • If you are ever prompted with a VNC Server dialog, you must enter the IP Address of the target panel. This can be found within the **Setup** > **Protected Setup** >System Settings page. - This IP Address of the panel appears within the IP Settings section of this page • Enter the IP Address and click **OK**. You will then be prompted with the G4 Authentication popup where you must enter the panel's WebControl password.
While attempting to communicate directly with the Virtual Master (on the PC) via a USB connection, I can't get my communication icon to turn Green.	• A Green communication icon indicates that a connection has been established to the target Master or target Virtual Master. • Launch NetLinx Studio and configure the Master Connection communication settings for a Virtual Master. • Navigate to the System Settings page and toggle the *Type* field to **USB**. • Make sure the Type-A USB connector is securely connected to the PC. • Make sure the panel DOESN'T have the mini-USB connected and TURN OFF the panel. • Once the panel has turned ON THEN connect the mini-USB to the Program Port. The USB icon should appear in your system tray. If it doesn't, refer to the *Configuring and Using USB with a Virtual Master* section on page 49. • The panel can take a few minutes to detect the connection to the PC.
Calibration is not working.	• After the Modero touch panel has been updated with a new firmware kit (downloaded to the panel through NetLinx Studio), the calibration could need to be reset. • Cycling power to the panel should provide a baseline calibration for the particular touch panel. Proceed to the Calibration page and reset the on-screen calibration.
Panel doesn't respond to my touches	• The protective cover acts to press on the entire LCD and makes calibration difficult because the user can't calibrate on specific crosshairs when the sheet is pressing on the whole LCD. • Verify that the protective laminate coating on the LCD is removed before beginning any calibration process.

Troubleshooting Information (Cont.)	
Symptom	Solution
I updated my panel firmware but my Battery Base page doesn't seem to be working properly.	• Cycle power manually to the panel and check the Battery Base page after startup. • If downloading the firmware to the panel via a COM port, try using an IP Address and retry the download of the firmware to the panel.
There is a crawling, dashed line on the left border of the graphics.	• On some units at some resolutions, there are wavy lines across the entire screen. This has been seen on middle resolutions and is referred to as the "Mid Range Fallout" problem. • This is due to the graphics controller settings in the firmware. • Update firmware to the latest v2.XX. firmware. • Visit the **www.amx.com** > **Tech Center** > **Downloadable Files** > **Firmware Files** > **Modero panels**. Then Download the KIT file to your computer.
My Modero panel isn't appearing in my Workspace window.	• Verify that the System number is the same on both the NetLinx Workspace window and the System Settings page on the Modero panel. • Verify you have entered the proper NetLinx Master IP and connection methods into the Master Connection section of the System Settings page. • Refer to the *System Settings Page* section on page 107 for more information.
My Modero panel can't obtain a DHCP Address	In requesting a DHCP Address, the DHCP Server can take up to a few minutes to provide the address. • Verify there is an active Ethernet connection attached to the rear of the Modero before beginning these procedures. • Select **Diagnostics** > **Network Address**, from the Main menu and verify the System number. • If the IP Address field is still empty, give the Modero a few minutes to negotiate a DHCP Address and try again.
My NXT-BP battery pack is blinking when I check the battery life indicator.	• A blinking battery life LED indicates that there is less than 10% power charge remaining on the battery. • It is recommended that you fully charge the battery either in the NXA-BASE/B battery base or in the NXT-CHG battery charger. • Refer to the *NXA-BASE/B Battery Base Kit (FG2255K)* section on page 22 for more information.
I was using the power from PSN, and when I connected my NXA-BASE/B battery base to the active panel, my screen went blank.	• Modero battery bases can not be "hot-swapped" or replaced without powering down the Modero and removing the PSN connector. If you are currently using a direct power connection to the panel and then wish to connect an NXA-BASE/B. First, power-down the panel and detach the rear power connection. Then, remove any batteries from within the NXA-BASE/B and connect the battery base to the underside of the panel. After connecting the base to the un-powered panel, then run power to the panel by either reconnecting the power cable to the rear of the panel or inserting the NXT-BP batteries into the NXA-BASE/B. • Refer to the *NXA-BASE/B Battery Base Kit (FG2255K)* section on page 22 and *Installing the NXA-BASE/B to an NXT Modero Panel* section on page 23 for more information.
My WEP doesn't seem to be working.	• WEP will not work unless the same default key is set on both the panel and the AP. • For example: if you had your access point set to default key 4 which was 01:02:03:04:05 and you set the Modero to key 1 which was also 01:02:03:04:05 it will not work. You have to set key 4 on the Modero to 01:02:03:04:0.

Troubleshooting Information (Cont.)	
Symptom	Solution
I can't seem to completely charge my batteries from within an NXA-BASE/B connected to a power supply.	NXT-BP batteries can be charged from either an external NXT-CHG battery charger or from within the NXA-BASE/B located below an NXT panel. • The NXA-BASE/B Battery base should be updated with the latest firmware (part of the Modero firmware KIT file) from **www.amx.com**. • The base can only charge batteries while the NXT panel is in Sleep Mode. If the panel parameters are set to their highest values, the priority for the power draw becomes the active panel functions and no power is routed to the base for charging. • Adjust the Display Timeout value to allow the panel to commence the Sleep Mode and begin charging batteries within the base (drawing power from a PSN). • Refer to the *NXA-BASE/B Battery Base Kit (FG2255K)* section on page 22 for more information.
NetLinx Studio only detects one of my connected Masters.	Each Master is give a Device Address of 00000. • Only one Master can be assigned to a particular System number. If you want to work with multiple Masters, open different instances of NetLinx Studio and assign each Master its own System value. • Example: a site has an NXC-ME260/64 and an NI-4000. In order to work with both units. The ME260/64 can be assigned System #1 and the NI-4000 can then be assigned System #2 using two open sessions of NetLinx Studio 2.x.
I can't seem to connect to a NetLinx Master using my NetLinx Studio 2.x.	• From the **Settings** > **Master Comm Settings** > **Communication Settings** > **Settings (for TCP/IP)**, uncheck the "**Automatically Ping the Master Controller** to ensure availability". • The pinging is to determine if the Master is available, and to reply with a connection failure instantly if it is not. Without using the ping feature, you will still attempt to make a connection, but a failure will take longer to be recognized. Some firewalls and networks do not allow pinging, though, and the ping will then always result in a failure. • When connecting to a NetLinx Master controller via TCP/IP, the program will first try to ping the controller before attempting a connection. Pinging a device is relatively fast and will determine if the device is off-line, or if the TCP/IP address that was entered was incorrect. If you decide NOT to ping for availability and the controller is off-line, or you have an incorrect TCP/IP address, the program will try for 30-45 seconds to establish a connection. ***Note**:* If you are trying to connect to a master controller that is behind a firewall, you may have to uncheck this option. Most firewalls will not allow ping requests to pass through for security reasons.
I have more that one Modero panel connected to my System Master and only one shows up.	Multiple NetLinx Compatible devices (such as Modero panels) can be associated for use with a single Master. Each Modero panel comes with a defaulted Device Number value of 10001. When using multiple panels, it can become very easy to overlook the need to assign different Device Number values to each panel. • Press and hold the grey Front Setup Access button for 3 seconds to open the Setup page. • Press the **Protected Setup** button (located on the lower-left of the panel page), enter ***1988*** into the on-screen Keypad's password field, and press **Done** when finished. • Enter a Device Number value for the panel into the Device Number Keypad. *The default is 10001 and the range is from 1 - 32000*.

Troubleshooting Information (Cont.)	
Symptom	Solution
After downloading a panel file or firmware to a G4 device, the panel behaves strangely.	Symptoms include: • Having to repeat the download. • Inability to make further downloads to the panel. May get "directory" errors, "graphics hierarchy" errors, etc.… indicating problems with the Compact Flash. • Panel will not boot, or gets stuck on "AMX" splash screen. • Other problems also started after downloading to a new panel or a panel with a TPD4 file that takes up a considerable amount of the available Compact Flash. Cause: • If the G4 device already contains a large enough file, subsequent downloads will take up more space than is available and could often corrupt the Compact Flash. The demo file that typically ships with G4 panels is one such file. Solution: • DO NOT download TPD4 files (of large size) over the demo pages, or any other large TPD4 file. • First download a small blank one page file to the G4 panel using the Normal Transfer option to send/download the page. Reboot the device, then do your regular file or firmware download.
My NXA-BASE/B Battery Base isn't being recognized by the NXT touch panel.	**The battery base CAN NOT be "hot swapped".** This swapping occurs when an NXT panel is currently being powered by a PSN6.5 and then is connected to a battery base containing NXT-BP batteries. Introducing a new power source onto an existing configuration can damage the NXA-BASE. Solution: If your base is not being recognized by the touch panel but is still providing power: • Launch the latest version of NetLinx Studio. • Refresh the particular System from within the OnLine Tree tab. • Identify the NXT panel using the battery base. • From the Main menu go to **Tools** > **Firmware Transfers** > **Send to NetLinx Device**. • Locate and select the 2250_XXX_v2 KIT file for the battery base. • Enter the Device and System values, verify the method of communication (IP recommended). • Click Send to reload the new base KIT file onto the NXA-BASE/B. If this above steps do not cause the base to be recognized by the NXT touch panel on the Setup page, contact AMX Technical Support for further assistance.
The Battery Base button doesn't appear on the panel's Setup page.	• Refer to the above troubleshooting symptom.

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